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DEPARTMENT OF THE INTERIOR

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UNITED STATES BUREAU OF EDUCATION
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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, October 7, 1913.

SIR: A half dozen States are still without laws requiring parents and guardians to give their children and wards an opportunity to profit by the provisions made by these States for their education, and thousands of children are growing up without that education and training necessary for life, for making a living, for membership in society, and for the duties and responsibilities of citizenship. The individual, society, and State suffer as the result, despite the fact that the citizens and the property of the State are taxed for the support of schools. A general knowledge of the fact that more than four-fifths of the States and Nations accounted civilized and progressive have attendance laws on their statute books, and an understanding of the principle of such legislation and that it is necessary for democratic freedom, will hasten the needed legislation on this subject in these States. In other States attendance laws are less effective than they should be, and education officers and legislators want information as to the most effective laws of other States. Everywhere school officers and students of education want information that will enable them to make comparative studies of the relative value of various forms of attendance laws and of their administration.

For these reasons I recommend that the accompanying manuscript, prepared by W. H. Hand, professor of secondary education in the University of South Carolina, and members of this bureau, be published as a bulletin of the Bureau of Education.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

COMPULSORY SCHOOL ATTENDANCE.

I. COMPULSORY ATTENDANCE LAWS IN THE UNITED STATES.

By W. S. DEFFENBAUGH,

Specialist in School Administration, Bureau of Education.

The formulation of effective compulsory attendance laws has been one of the problems confronting legislators and school officials for the past 70 years. The most marked advance in enacting such laws has been made since 1890. Prior to that date only 27 States and the District of Columbia had compulsory laws, and many of these were inoperative. Now 43 States have them. How effectively the laws of the several States are enforced it is not possible to determine, as statistics of enforcement are lacking in most of the States and in many of the city reports, but that many essential factors are wanting in some of the laws will be evident when a careful study is made of the tabular digest presented in this bulletin.

In the following pages the writer has attempted to call to the attention of the reader a few of the arguments for such laws and some of the factors necessary in their enforcement. The reports of city and State superintendents and articles prepared by practical school men are quoted freely.

To introduce the subject, and to help the reader recall the early history of compulsory education in this country, a brief historical sketch of the early Massachusetts laws is presented.

In 1642 the General Court of the Massachusetts colony issued the following order:[1]

> This court, taking into consideration the great neglect of many parents and masters in training up their children in learning and labor, and other employments which may be profitable to the Commonwealth, do hereupon order and decree that in every town the chosen men appointed for managing the prudential affairs of the same shall henceforth stand charged with the care of the redress of this evil, so as they shall be sufficiently punished by fines for the neglect thereof, upon presentment of the grand jury, or other information or complaint in any court within this jurisdiction; and for this end they, or the greater number of them, shall have power to take account from time to time of all parents and masters, and of their children, concerning their calling

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[1] Records Mass. Colony, Vol. II, p. 6.

and employment of their children, especially of their ability to read and understand the principles of religion and the capital laws of their country, and to impose fines upon such as shall refuse to render such accounts to them when they shall be required.

This law did not prescribe where the children should be taught. All it demanded was that they be given instruction in certain subjects; but five years later, in 1647, this was remedied by the following order:[1]

It being one chiefe project of that old deluder, Satan, to keep men from the knowledge of the scriptures, as in former times, keeping them in an unknowne tongue, so in these latter times, by perswading them from the use of tongues, so that at least, the true sence and meaning of the originall might bee clouded with glosses of saint seeming deceivers; and that learning may not bee buried in the grave of our forefathers in church and commonwealth, the Lord assisting our indeavors; *It is therefore ordered by this courte and authority thereof*, That every towneshipp within this jurisdiction, after that the Lord hath increased them to the number of fifty howsholders, shall then forthwith appointe one within theire towne to teach all such children as shall resorte to him, to write and read; whose wages shall be paid either by the parents or masters of such children, or by the inhabitants in generall, by way of supplye, as the major parte of those who order the prudentials of the towne shall appointe; provided, that those who send theire children, bee not oppressed by paying much more than they can have them taught for in other townes. *And it is further ordered*, that where any towne shall increase to the number of one hundred families or howsholders, they shall sett up a grammar schoole, the masters thereof being able to instruct youths so far as they may bee fitted for the university; and if any town neglect the performance hereof above one yeare, then every such towne shall pay five pounds per annum to the next such schoole, till they shall perform this order.

These two laws embodied the principles upon which modern compulsory education rests in declaring that all children should be educated, that the parent or the community must provide suitable education, and that the State may compel the establishment and maintenance of schools and determine what these schools shall teach.

When the development of the factory system began in Massachusetts in the early part of the nineteenth century and the population began to concentrate in villages and cities, it was found that children could do much of the work in the factories and they were taken away from school for that purpose. It then became evident that further legislation was needed, and a "factory law" was enacted in 1842; but this was practically a dead letter, at least in its relation to school attendance. So great had the evils of nonattendance and truancy become that Horace Mann gave especial attention to it in his reports, and by 1850 public sentiment had become sufficiently aroused to pass a truancy law. A compulsory attendance act followed in 1852, and that was amended in 1859 to read as follows:

SECTION 1. Every person having under his control a child between the ages of 8 and 14 years shall annually during the continuance of his control send such child to some public school in the city or town in which he resides at least 12 weeks, if the public schools of such city or town so long continue, 6 weeks of which time shall be consecutive, and for every neglect of such duty the party offending shall forfeit to the use of such city or town a sum not exceeding $20; but if it appears upon the inquiry of the truant officers or school committee of any city or town, or upon the trial of any prosecution, that the party so neglecting was not able, by reason of poverty to send such child to school, or to furnish him with the means of education, or that such child has been otherwise furnished with the means of education for a like period of time, or has already acquired the branches of learning taught in the public schools, or that his bodily or mental condition has been such as to prevent his attendance at school or application to study for the period required, the penalty before mentioned shall not be incurred.

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[1] Records Mass. Colony, Vol. II, p. 203.

SEC. 2. The truant officers and the school committees of the several cities and towns shall inquire into all cases of neglect of the duty prescribed in the preceding section and ascertain from the persons neglecting the reasons, if any, therefor; and shall forthwith give notice of all violations, with the reasons, to the treasurer of the city or town, and if such treasurer willfully neglects or refuses to prosecute any person liable to the penalty provided for in the preceding section he shall forfeit the sum of $20.[1]

The failure of these early laws to secure attendance was apparent, and Supt. White took up the subject in 1870, saying:[2]

> I am fully convinced, after many years of observation and inquiry, that the several enactments relating to this matter (absenteeism) are ill-adapted to their purpose, discordant, and incapable of execution, and therefore need a careful and thorough revision, to which ample time and thought should be given. I therefore respectfully recommend that the present legislature be requested to pass a resolve directing the board of education or such other competent body as may be deemed proper to take into consideration all existing laws relating to school attendance, truancy, absenteeism, and the employment of children in manufacturing establishments, and inquire what alterations and amendments are needed to combine said enactments into a uniform, consistent, and efficient code adapted to the present views and wants of the public.

By 1890 the law had been so amended that it was well enforced, according to Supt. J. W. Dickinson, who at that time reported to the United States Bureau of Education that "the compulsory law operates well and is generally obeyed."[3] The obedience which seemed to satisfy Mr. Dickinson would probably fail to meet the approval of the officers of the present day; but constant improvement has been made since then both in the laws and in the machinery for their enforcement.

The Massachusetts compulsory education laws have been the model for imitation in other States of the Union, and all of them now have such laws except Alabama, Florida, Georgia, Mississippi, South Carolina,[4] and Texas. The laws of Maryland, Louisiana, Virginia, and Arkansas, however, do not apply to the entire State.

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[1] U. S. Commis. of Ed., Rep., 1888-89, p. 472. [2] Ibid., pp. 473-74. [3] Ibid., p. 486.

[4] A compulsory law applying to the cities of Charleston and Columbia was enacted in South Carolina in 1876, but it was never enforced and was repealed soon afterwards.

The following table gives the date of the enactment of the first compulsory attendance law in each State:

Date of enactment of compulsory attendance laws.

Massachusetts	1852
District of Columbia	1864
Vermont	1867
New Hampshire	1871
Michigan	1871
Washington	1871
Connecticut	1872
New Mexico	1872
Nevada	1873
New York	1874
Kansas	1874
California	1874
Maine	1875
New Jersey	1875
Wyoming	1876
Ohio	1877
Wisconsin	1879
Rhode Island	1883
Illinois	1883
Dakota	1883
Montana	1883
Minnesota	1885
Nebraska	1887
Idaho	1887
Colorado	1889
Oregon	1889
Utah	1890
Pennsylvania	1895
Kentucky	1896
West Virginia	1897
Indiana	1897
Arizona	1899
Iowa	1902
Maryland	1902
Missouri	1905
Tennessee	1905
Delaware	1907
North Carolina	1907
Oklahoma	1907
Virginia	1908
Arkansas	1909
Louisiana	1910

OPPOSITION TO COMPULSORY EDUCATION LAWS.

Though nearly all the States in the Union have enacted compulsory attendance laws, each State has had to overcome much opposition on the part of those who argued that such laws are un-American in principle, in that they interfere with the personal liberty of the parent. In 1891 and 1893 Gov. Pattison, of Pennsylvania, vetoed compulsory education bills on that ground. In 1895, when Gov. Hastings signed a similar bill, he did so only because he did not wish to obtrude his judgment in the matter, which was against the bill.

The plea that such laws interfere with personal liberty has, however, never been recognized by the courts, and all such laws now on the statutes of the several States are considered constitutional.

Among the arguments offered by those opposed to the enactment of compulsory attendance laws are these: (1) A new crime is created; (2) it interferes with the liberty of parents; (3) new powers are arrogated by the Government; (4) it is un-American and not adapted to our free institutions; (5) compulsory education is monarchical in its origin and history; (6) attendance is just as great without the law.

These points of opposition were met in 1872 by B. G. Northrop, secretary of the Connecticut State Board of Education, as follows:[1]

> Such a law would create a new crime. I reply, it ought to. To bring up children in ignorance *is* a crime and should be treated as such. As the most prolific source of criminality it should be under the ban of legal condemnation and the restraint of legal punishment. All modern civilization and legislation has made new crimes. Barbarism recognizes but few. To employ children in factories who are under 10 years of age or who have not attended school, or to employ minors under 18 years of age more than 12 hours a day, is each a new crime.
>
> It interferes with the liberty of parents. I reply again, it ought to, when they are incapacitated by vice or other causes for the performance of essential duties as parents.

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[1] An. Rep. Conn. Bd. of Ed., 1872, p. 32.

Many other laws limit personal liberty. The requisition to serve on juries, or to aid the sheriff in arresting criminals, or the exactions of military service in the hour of the country's need—these and many other laws do this. If the law may prohibit the owner from practicing cruelty upon his horse or ox, it may restrain the parent from dwarfing the mind and debasing the character of his child. If the State may imprison and punish juvenile criminals, it may remove the causes of their crime and its consequences of loss, injury, and shame. The child has rights which not even a parent may violate. He may not rob his child of the sacred right of a good education. The law would justly punish a parent for starving his child, and more mischief is done by starving the mind than by famishing the body. The right of a parent to his children is founded on his ability and disposition to supply their wants of body and mind. When a parent is disqualified by intemperance, cruelty, or insanity, society justly assumes the control of the children. In ancient Greece the law gave almost unlimited authority to the father over his offspring. The same is true in some semibarbarous nations now. In all Christian lands the rights of the parents are held to imply certain correlative duties, and the duty to educate is as positive as to feed and clothe. Neglected children, when not orphans in fact, are virtually such, their parents ignoring their duties, and thus forfeiting their rights as parents. The State should protect the helpless, and especially these, its defenseless wards, who otherwise will be vicious as well as weak.

It arrogates new power by the Government. So do all quarantine and hygienic regulations and laws for the abatement of nuisances. Now, ignorance is as noxious as the most offensive nuisance, and more destructive than bodily contagions. Self-protection is a fundamental law of society.

It is un-American and unadapted to our free institutions. To put the question in the most offensive form, it may be asked, "Would you have policemen drag your children to school?" I answer, "Yes, if it will prevent his dragging them to jail a few years hence." But this law in our land would invoke no "dragging" and no police espionage or inquisitorial searches. With the annual enumeration and the school registers in hand, and the aid of the teachers and others most conversant with each district, school officers could easily learn who are the absentees. * * *

Compulsory education is monarchical in its origin and history. Common as is this impression it is erroneous. Connecticut may justly claim to be one of the first States in the world to establish the principle of compulsory education. On this point our earliest laws were most rigid. They need but slight modification to adapt them to the changed circumstances of the present. Before the peace of Westphalia, before Prussia existed as a kindgom, and while Frederick William was only "elector of Brandenburg," Connecticut adopted coercive education. * * *

Attendance would be just as large without the law as it is now. It may be so. But so far from being an objection, this fact is strong proof of the efficiency of that law which has itself helped create so healthful a public sentiment. Were the law to be abrogated to-morrow the individual and general interest in public education would remain. The same might have been said of Connecticut for more than 170 years after the adoption of compulsory education. During all that period a native of this State of mature age unable to read the English language would have been looked upon as a prodigy. Still, in Connecticut as well as in Germany, it was the law itself which greatly aided in awakening public interest and in fixing the habits, associations, and traditions of the people.

To the argument that modern compulsory education laws are monarchical in their origin and history, J. W. Perrin replies:[1]

Common as the idea is that obligatory laws originated in Prussia, it is wholly erroneous. Nearly two centuries had elapsed from Luther's famous address in 1524, before Frederick William I issued those mandatory orders that developed into compulsory attendance laws. These orders were issued October 24, 1713, and nearly four years later, September 28, 1717, the King issued the first law. Then such laws had been tried by the State of Geneva, the Estates of Navarre, and the Duchy of Wurttemberg. Such a law had been in successful operation in Massachusetts for 75 years and in Connecticut for nearly the same time.

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[1] Compulsory Education in New England, p. 29.

ENROLLMENT.

Notwithstanding the fact that most States have enacted compulsory attendance laws, many of them fail to enroll all the children coming within the provision of the law and to secure regular attendance on the part of those enrolled. This, however, does not mean that compulsory attendance is a failure, as those States that have such laws enroll a greater percentage of children and have a higher average of attendance than those States that have no such laws. Cities that have recently made trial for the first time of compelling attendance report excellent results.

> During the first year of the enforcement of the compulsory law in New Orleans 1,361 cases were investigated with most satisfactory results. A very large number of children were placed in school and nearly 400 pupils became more regular in attendance.

The superintendent of schools of Raleigh, N. C., wrote to this office in February, 1913:

> For the first time the schools of Raleigh have compulsory attendance. As a result 729 more children are in school this year than last, and half of them are colored. The sentiment of the community is overwhelmingly in favor of the law.

SCHOOL CENSUS.

To secure the enrollment of pupils several factors are necessary, the most important of which is a complete census of all children of compulsory school age. Some otherwise well-written laws neglect this very important factor in execution, the school census being taken merely to secure State appropriations based upon the number of children in the district. That an annual census is necessary to secure enrollment is obvious. Every year children move from one district to another, and others have reached the compulsory age of 7, 8, or 9 years as the law may be; many immigrant children may have arrived who would not be discovered by the truant officer without a census list. If a school census has been taken, the teachers of the public, private, and parochial schools can promptly check off those not enrolled during the first few weeks of the school term. The truant officers can then easily locate them and secure their attendance.

As early as 1873, Supt. John D. Philbrick, of Boston, called attention to the need of a school census, thus:[1]

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[1] Rep. of Commrs. of Ed., 1888-89, vol. 1, p. 474.

> In a large city it is extremely difficult to execute the law respecting the attendance of children between 8 and 14 years of age without the aid of some new instrumentality. The truant officers have no means of knowing the whereabouts of those nonattendants who are not found wandering about the streets and public squares. What is needed is a register of the names, ages, and residences of all children of the prescribed school age. Such register is found necessary wherever compulsory education is fully carried out.

James D. Sullivan, chief attendance officer of the State of New York, says:[1]

> Our annual school census at present forms the basis of the inforcement of child labor and attendance laws, and serves this end only; yet the purpose sought is so important and far-reaching as to make the taking of the census one of the most important duties devolving upon the school authorities, because a thorough enforcement of these laws is necessarily dependent upon accurate and reliable census information.

In 1909 a permanent census bureau created in cities of the first class in New York revealed 518 children in the city of Rochester unlawfully out of school; 6,318 in Buffalo; and 23,241 in New York City. Though the machinery of the compulsory attendance and child-labor laws had been in operation over 16 years and with much success, yet over 30,000 children were unlawfully out of school.[2]

As further evidence of the value of a school census, the following extract is taken from the report of the commissioner of education of Massachusetts:

> In more populous centers school attendance officers are greatly handicapped by the absence of reliable information regarding the children on whom school attendance is obligatory. An annual census is required in the towns and cities of Massachusetts, but this census is not taken in such a way as to furnish information which attendance officers can use. Students of school administration are agreed that in more populous areas some form of permanent registration of all children who come under the school attendance law (and it is to be remembered that in some cases this extends to the age of 18 in Massachusetts) should be provided. In connection with the taking of the annual school census, it would be possible to provide a card record which could, after comparison with the registration of the school, become the basis on which attendance officers could investigate illegal absence.[3]

Similar testimony is presented by the commissioner of education of New York, who states:

> The organization of permanent census boards in cities of the first class under the provisions of the education law has become an efficient agency in the proper enforcement of the compulsory attendance law. The work of these boards in the cities of the first class has demonstrated that compulsory attendance laws can not be satisfactorily enforced without a complete up-to-date census available to the school authorities at all times. The law gives all cities not of the first class the discretion to organize census boards on the same conditions on which such boards are operated in the first-class cities. Thus far no city has voluntarily adopted the plan of a census board and carried out the work as it is done in the cities of the first class. However, some

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[1] Rep. of Commis. of Ed., New York, 1912, p. 324.

[2] Ibid., p. 325.

[3] 74th An. Rep. of Mass. Bd. of Ed., 1909-10, p. 85.

> of the other cities have done very much along this line. The law requires all cities which do not establish census boards to take a census of the children in such cities once every four years. The last census taken in these cities was in 1909, and another will not be taken until 1913. A census of the children of a city taken three years ago is of no material service to school authorities in the enforcement of the compulsory attendance law at the present time.[1]

Even with a yearly census many children of prescribed school age may be unlawfully out of school for an entire school year. If children move into a district after the census has been taken, the attendance officer may not discover them.

Who shall take the school census is a problem that needs careful consideration in framing compulsory education laws. If the enumeration is not made by the school board or its agent, it is a question of how complete a census will be taken. In Pennsylvania until 1911 it was the duty of the assessors to register the school children. In 1910 John W. Anthony, who made a study of the school census in Pennsylvania, said:[2]

> The farcical character of this census in most Pennsylvania districts has long been recognized. Sixty-two cities condemn the method and ten find it satisfactory. In twenty cities the enrollment exceeds the number on the census list.

Leonard P. Ayres, commenting on the school census, says:

> In 1900 the authorities of the United States Census made a study of the school censuses taken during that year and compared the results with the actual enumeration of children made by the Federal agents during the same year. In 26 States and Territories the number of children reported in the school censuses was less than the number found by the Federal agents. The local authorities failed to report more than a third of a million children of school age, the error in some cases being as high as 25 per cent. In 17 States the local agents reported a quarter of a million children more than there actually were, the error of over statement running as high as 15 per cent.[3]

THE IMMIGRANT.

Immigrant children in the large cities are difficult to locate. Miss Julia Richman says:[4]

> Notwithstanding all our compulsory education laws and all our child-labor laws, notwithstanding the fact that the welfare of the Nation depends upon the control of illiteracy, no attempt has ever been made by school authorities, whether municipal, State, or Federal, to secure a census of immigrants of legal school age. Were such records carefully made at ports of entry and duplicates thereof immediately sent to the proper school authorities, not one child under the age limit of the laws of the State could escape attendance at school. Thousands of such aliens have arrived, and are still continuing to arrive, drifting into delinquency and crime, with little or no interference on the part of the school. Somewhere and somehow at every port of entry there must be established a bureau in which most careful entries should be made—entries that will show a list of immigrants of school age, tabulated according to destination. Carefully classified duplicate lists must be immediately forwarded

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[1] Rep. of Commis. of Ed., New York, 1912, p. 62.

[2] Compulsory Education in Pennsylvania, p. 4.

[3] Laggards in Our Schools, Ayres, p. 191.

[4] Proc. of the Nat. Ed. Asso., 1905, p. 113.

to the municipal school authorities in the respective towns or cities to which the aliens are bound. With these lists in hand, the school authorities could enroll immediately all who belong under their control.

CHILDREN WITH EMPLOYMENT CERTIFICATES.

Another class of pupils often lost to the schools are those who have received employment certificates but have failed to find work, or who, after working a few weeks, have quit and not returned to school. Supt. W. H. Maxwell, of New York City, says:[1]

> Principals and teachers who have paid some attention to the causes of truancy inform me that one of the most patent is the issuance of employment certificates to boys and girls who have not secured employment. The law requires that they shall be in school unless legally employed; but most young people who obtain the certificates, their parents, and, I am sorry to say, some principals and teachers look upon these official documents as licenses to remain away from school and to roam the streets until employment is obtained. If perchance one of these delinquents is arrested by an attendance officer, his excuse is that he is looking for work. This excuse is generally accepted by the courts as a sufficient defense against the charge of truancy. There is no question that the placing of employment certificates in the hands of children who have no trade and who are not employed is a partial cause of truancy.

This weakness in most compulsory laws can be remedied only by having the employment certificate made directly to the employer after the child has found employment and by having the employer return this certificate to the school authorities when the child leaves his employ. This plan effectually prevents children with employment certificates from wandering the streets before they have secured employment or after they have quit a position. This is much more effective than having the employer report every three months the names of all children in his employ, as by that plan a child may be unlawfully out of school several months before the school authorities learn of the fact, while if the certificate is returned at once the child can be easily located.

TRANSFERRING TO AND FROM PRIVATE SCHOOLS.

Other children are lost when transferring to and from private schools if there is not the closest cooperation between the public school and the private school. A pupil may receive a transfer to attend a private school. This child may be lost to the school unless inquiries are made of the private school whether such child is enrolled. A child may leave a private school and not enroll in a public school unless the public school has been notified of the child's withdrawal from the private school. This defect can not be remedied until precisely the same reports to attendance officers as to absentees are required of private schools as of public schools. A few States require the register of private schools to be kept open for inspection by public-school officials, but this is not sufficient to enforce the attendance laws properly.

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[1] An. Rep. New York City, 1912, p. 241.

POVERTY.

One of the most difficult problems to solve in enforcing the compulsory attendance laws is that of compelling children from poverty-stricken homes to attend school. Some States provide that such children may be excused. The question may be raised, If it is necessary for the perpetuity of the State to compel the attendance of children belonging to the wealthier class of people, does it follow that the education of the poorer classes is not necessary?

To compel the attendance of children of parents who are too poor to keep them in school, some States have taken decided steps. In Michigan if a parent can not support a child of compulsory school age, the board of education may grant such relief as will enable the child to attend school during the entire school year, not more than $3 a week to be paid a family for one child, nor more than $6 a week for the children of any one family. The law of Oklahoma provides that if a widowed mother needs the support of her child under 10 years of age the county commissioners, on certificate of the county superintendent, may pay the child such sum as may be necessary in lieu of wages.

All cases must necessarily be thoroughly investigated. In Cincinnati the board of education has made arrangements with the local associated charities to have all cases reported by truant officers investigated by the trained social workers of that organization. Relief is afforded only when recommended by them.[1]

An argument offered for such relief is that the benefit arising from the labor of a child under 14 years of age is short-lived, as his earning capacity is small; and if he is allowed to work during his immature years, his earning capacity will never be great, for he will always be an unskilled laborer; he may even become a burden upon society, since it is not likely that he can ever earn much more than a child. If, on the other hand, relief is afforded and the child is permitted to attend school and complete the elementary course of study, his earning capacity and his ability to advance are increased, thus taking him out of the ranks of a class verging upon pauperism.

Franklin H. Giddings, professor of sociology, Columbia University, discussing the social aspect of compulsory education and child-labor laws, says [2] that—

> a very special difficulty, and one that puts all our theories and our devices to a severe test, is that which is presented by destitute families, and that the practical question,

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[1] Annals of Am. Acad., vol. 33, sup., p. 79.

[2] Proc. of Nat. Ed. Assoc., 1905, p. 112.

which has to be answered over and over is: Is it right to take a strong overgrown boy 13 years of age from money-earning employment and force him to attend school, when, by so doing, we compel a widowed mother to apply to private or public relief agencies for help, thereby making her, and perhaps the boy also, a pauper? Prof. Giddings concludes that the only answer, consistent with the policy of compulsory education itself, is the proposition that in such cases adequate public assistance should be given, not as charity, but as a right. * * *

A final and deeper difficulty exists which has received, curiously, little attention. We hear a great deal lately about "race suicide." Large families are no longer seen, especially in the so-called middle class. It is strange that no one has pointed out the connection between the increased demand upon parents to maintain their children in school, foregoing the earnings that children might add to the family income, and the diminishing size of the average family. * * * The question therefore that we shall have to face and to answer is this: Shall the State pay parents for keeping their children in school between the ages of 10 and 14?

SECURING REGULAR ATTENDANCE.

To enroll children of compulsory school age is but the first step in enforcing compulsory-attendance laws; the next step is to secure regular attendance. By referring to the tables, page 25, it will be seen that the percentage of attendance is so low in many States that the efficiency of the schools is only two-thirds as great as it should be when measured in terms of attendance as compared with enrollment. The average effective school year in the United States is only 111.8 days out of an average of 156.8 days the schools are in session. Granting the time necessary for the average child to complete a grade is 156.8 days, the child attending the average time of 111.8 days would need 11.2 years in which to complete an eight-year course. In other words, the child would lose three years, which in most cases would mean the elimination of that child before the eighth grade was reached. If 180 days are necessary to complete a grade, a child attending 111.8 days each year would be 12.9 years completing eight grades.

The following extracts from school reports at once make it evident that if pupils are to be promoted promptly and regularly, and if the schools are to reach their full measure of efficiency, the school officials must not only enroll all the children of compulsory age, but must also secure regular attendance for the whole term. In New York City the highest rate of promotion at the end of the term June, 1911, was among children absent 10 days and less, the rate of promotion being 93.16 per cent. The rate of promotion was lower for pupils absent 11 to 20 days than for pupils absent 10 days by 5.56 per cent; for pupils absent from 21 to 30 days, by 17.85 per cent; for pupils absent from 31 to 40 days, by 18.62 per cent; and lower for pupils absent 41 days and above, by 40.34 per cent.[1]

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[1] Report Committee on School Inquiry, New York City, p. 66.

Effect of irregular attendance upon promotion.[1]

Number of days present.	Promoted more than twice.	Promoted twice.	Promoted once.	Not promoted at all.
180 or more	190	7,484	1,871	124
160 and less than 180	162.	5,064	2,027	204
140 and less than 160	58	1,138	934	161
120 and less than 140	16	434	496	154
100 and less than 120	5	217	373	144
80 and less than 100	8	169	767	352
60 and less than 80	3	78	298	379
40 and less than 60	1	65	224	399
20 and less than 40	2	30	150	438
Less than 20	1	17	57	309
Total	446	14,696	7,197	2,664

[1] An. rep. of public schools of Columbus, Ohio, 1911, p. 188.

REPORTING ABSENTEES.

Superintendents of schools often complain that parents, once having enrolled their children, assume that they have met the requirements of the compulsory-attendance law; that they then feel at liberty to keep their children out of school for the most trivial reasons, and it is not uncommon for a teacher to receive notes from parents saying simply that the child "was needed at home." Whenever such excuses are accepted, the compulsory-attendance law at once becomes a dead letter so far as that case is concerned.

Some laws are obviously weak in that no provision is made for reporting absentees to the attendance officer. To secure regular attendance, it is evident that teachers should report at once all absentees who are not legally excused. Some States require teachers to report absentees but once a month, when the monthly report is sent to the superintendent or secretary of the board; some require such reports only once or twice a year. Clearly, if absentees are reported but once a month a parent may keep his child out of school for 20 or more days before he is called to account. Some States do not even specifically require teachers to report absentees to the attendance officer or superintendent.

The effectiveness of compulsory-attendance laws depends to a great extent upon how promptly teachers report unexcused absences, and excuse only those whom the law exempts. Several of the laws recently enacted require reports to be made daily. In cities of the first, second, and third classes in Kentucky the principal of each school must report each day to the city superintendent or truant officer all children absent without lawful excuse. Several States require reports after an absence of three days. In a well-administered school no child should be out of school even for that length of time without the teacher's knowing where such child is, either by a personal visit or by a visit from the attendance officer to discover the cause of absence. A close and rigid investigation of all excuses reduces truancy and irregular attendance to a minimum.

An experiment was conducted by the truancy department of the Indianapolis schools several years ago by having the truant officer visit the school daily and obtain the names of all absentees. All cases of absence were visited, even though a good excuse, such as sickness, was known to exist. Although many children were excluded at that time, as medical inspection had been recently introduced, the absentees during the four months' period was 20 per cent less than for the corresponding period of the preceding year. The method was discontinued, as it imposed too much work upon the officer, whose duties were already heavy. Money so expended would, however, bear dividends far beyond those accruing to the more or less haphazard method under present conditions.[1]

TRUANTS.

Many parents think that compulsory attendance laws are aimed directly at truancy, and that it is the chief duty of the attendance officer to be on the lookout for truants. It is a question, however, whether a truant officer should arrest a boy on the street for playing truant or whether the parent should be arrested. Some truant officers make information against the parent, and if the parent proves that he can not control his child the officer takes charge of the child. In California and other States if a parent presents proof by affidavit that he is unable to compel his child to attend school the parent shall be exempt from penalties, and the child may, in the discretion of the board of education, be deemed a truant and subject to assignment to the parental school.

W. I. Bodine, superintendent of compulsory education in Chicago, says:[2]

> It is the policy of the Chicago compulsory education department to minimize truancy by checking the temporary absentee in the first lapse of attendance at school by prosecuting indifferent parents in instances where they are responsible for truancy and nonattendance and by sending to the parental school those habitual truants who are beyond the control of parents.

The latter class is relatively very small. Of 56,450 cases of nonattendance in St. Louis, 1911–12, there were only 1,709 cases of truancy; 196 were brought to juvenile court, and 27 taken to the home of detention.[3] Of 63,855 cases in Chicago, 3,801 were truant, only 1,352 reporting the offense after the case had been put into the hands of the truant officer.[4] Of 162,124 cases referred to the attendance officers in New York City for investigation, 11,064 were found to be truants. Of this number 5,848 relapsed into truancy and were again returned to school or were committed to a truant school; 151 were committed to a truant school by the city superintendent, and 705 by the children's court.[1] Of the 8,983 cases investigated in the State of Connecticut in 1910–11, there were but 71 truants.[2]

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[1] Educational review, Indianapolis. 43: p. 80.

[2] Charities, vol. 17, p. 535.

[3] An. Rep. St. Louis, 1911–12, p. 296.

[4] An. Rep. Chicago, 1912, p. 86.

In the small cities and in rural districts where there are only a few truants, it is a problem to know what to do with them, as school boards in cities under twenty-five or thirty thousand population are seldom inclined to establish separate schools for truants. The problem is solved in some States by the establishment of county industrial schools for habitual truants. Many States, however, make no other provision than the State reform school. When there is no other school for truants than a reform school, habitual truants and incorrigible children are often not committed for fear that, bad though they are, to send them there would make them worse.

Experience has shown that effective enforcement of compulsory laws requires two kinds of special schools: One for children who, because of irregular attendance or other causes, are not keeping up with their classes; and the other kind for truants. In each case the work should be adapted to the conditions, and teachers of special skill should be provided.

OFFICERS.

It is obvious that no law can be enforced without proper officials charged with its enforcement. Dr. Andrew S. Draper, writing of the necessity of such officers, says:[3]

> Attendance officers are a vital factor in the proper enforcement of the compulsory attendance law. This statement is true in relation to the enforcement of this law in any part of the State, but it is particularly true in relation to its enforcement in the rural regions. In the populous centers of the State better school organizations generally exist than in the country, and there is permanent work for truant officers. The attendance officers in the country districts are generally engaged in pursuits which demand most of their time, and they do not give sufficient attention to looking after violations of the compulsory attendance law. The fact that men must be chosen for this work who are generally required to engage in some regular business to gain a livelihood renders the selection of such men all the more important. Much of the failure properly to enforce this law grows out of the selection of inefficient attendance officers. It is believed that a better class of such officers would be provided if the authority to appoint them should be transferred from town boards to the new supervisory school officers known as the district superintendents.

Indiana has undoubtedly taken an advance step in the matter of securing a better class of men for attendance officers by enacting that a person to be eligible for appointment as county or other attendance officer shall have completed the eighth grade of the State's common schools or have an education equivalent thereto. One of the chief reasons why inefficient men are often employed, especially in rural districts and in small cities, is that the salary is usually so low that no capable man will accept the position unless he has some other occupation.

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[1] An. Rep. New York City, 1912, pp. 236–239.

[2] An. Rep. of Conn., 1911, p. 111.

[3] An. Rep. of New York State, 1913, p. 61.

Another officer, the "school visitor" or "visiting teacher," has become one of the efficient means in some cities for securing regular attendance. Miss Mary Flexner, who has made a recent study of the work of these officers, writes:[1]

> The visiting teacher was created to bridge a gap in the existing school machinery. Her province lies outside that of the regular teacher, the attendance officer, and the school nurse, though, like the attendance officer and the school nurse, she goes into the child's home. To her is assigned the group called the "difficult" children, and it is her aim to discover, if possible, the cause of the difficulty which manifests itself in poor scholarship, annoying conduct, irregular attendance, or the need of or desire for advice on some important phase of life. It is too much to expect the regular teacher, handicapped as she is by her large class, to cope with such situations. Nor is it to be expected that those qualified to act as attendance officer or school nurse, were they not already burdened, should do the work of the visiting teacher. In her is united the training that makes a teacher and a social service worker, and it is because of this combination that she is able to widen the regular teacher's reach and help her to interpret and solve the problems as they present themselves. From the school she learns that the child is apparently making little effort, that his work is "C" or worse, or that he is perpetually making trouble in the classroom and is never attentive, or that he seems lifeless, unable to keep pace with the class, or that he attends so irregularly it is impossible to teach him anything, or that he has not time to study, and the situation at home is such that he must leave school and go to work.
>
> With these facts as clues, she sets to work; it is impossible to define her methods, for they vary with her tact, her resourcefulness, as with the specific character of the problem before her. Briefly, they are the methods that spring from a friendly interest, an intimate personal relation.
>
> Between the home and the school the visiting teacher vibrates, carrying to the former the school's picture of the child and returning to the school to reenforce that impression or to shed new light upon the problem. There is no fixed number of times that she travels this path, as there is no fixed hour of the day. The urgency and complexity of the situation alone determine her movements. Nor is there any regular routine of action that she follows. Whatever in her judgment seems imperative she endeavors to effect, using to this end everything that the ingenuity of man has devised to make smooth the rough places in life. It is a focusing of interests that she demands. The child is the pivotal point on which she hopes to bring all her knowledge and experience to bear. Sometimes it is the expert teacher's training that she invokes; sometimes the psychologist or the physician, general or special, that she consults, or, again, it is the social worker to whom she appeals. Before these she lays the facts, the reasons why her services have been sought, and from them she asks cooperation.
>
> The results achieved do not always show a complete cure. In some cases there has been a marked improvement in scholarship, conduct, or attendance. At least a good start in the right direction has been made. In others the child has been transferred to a regular class—regular, special, or ungraded—or to a trade school, where his chances at succeeding in making a place for himself are increased. In others the information that the visiting teacher shares with the child's teacher has resulted in a change of attitude on her part or an expansion or contraction of the course of study or in giving the child extra instruction in study periods or out of school hours. Finally, he has been helped to promotion, even to graduation.

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[1] Sch. Bd. Jour., July, 1913, p. 35.

In 1904 Mrs. Dorcas E. Hiser, then director of the truancy department of Indianapolis, Ind., made a special study of the colored schools in that city to determine the causes of the poor attendance at these schools and the best methods of removing those causes. As a result of her investigation, Mrs. Hiser recommended that a trained charity worker be employed as attendance officer for the colored schools and as a friendly visitor for the homes.

A visit was made each day to a different school and a list of absentees was taken from the teacher's register. Then followed a visit to the homes, where each case was handled according to its individual needs.

The chief truant officer, writing of these visits, says in his report for 1909:[1]

> The gain that can be expressed by figures, encouraging though it is, does not compare in importance to the social gain. The former hostility to colored schools and colored teachers has been almost entirely replaced by an increasing race pride in the schools and by a growing consciousness that the school is working with the home for the best interest of the child. The encouraging attitude of colored parents toward their schools is well illustrated by the active parents' club, which is connected with each school.

State agents are undoubtedly of great assistance in the proper enforcement of the attendance law. At present in most States the State department has no direct way of knowing whether more than a perfunctory attempt has been made to carry out the provisions of the law. The commissioner of education of Massachusetts, recognizing the value of such agents, says in his report for 1911–12 that it would be an advantage to education in that State if a specially trained agent were employed to give his services to communities in the enforcement of the laws on compulsory education, on the census, and on the oversight and custody of truants.

In an address before the Pennsylvania State Teachers Association in 1910, John W. Anthony, who had had much experience in small city schools and in the schools of Pittsburgh, said:[2]

> The State department needs one thing more before a thorough enforcement of compulsory education becomes general in our State. Two or three traveling inspectors should be appointed, similar to the high-school inspectors already at work.
>
> On the basis of their reports the department would be able—as it is not able at present, although the law allows it—to withhold one-fourth of any district's appropriation for failure to enforce the law. New York State has 12 such traveling agents. As a result of their reports the State appropriations were withheld last year from 13 school districts.

Unless there is some such inspection it is impossible for the State department to know whether each district in the State has fully complied with the law, and, again, such officers would make it possible to collect the data necessary to determine what legislative changes are needed and how the law could be most effectively administered.

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[1] An. Rep. Indianapolis, 1909, p. 219.

[2] Compulsory Education in Pennsylvania, p. 7.

AGE.

One other problem difficult to solve in the enactment of compulsory attendance laws is that of determining the proper age limits. The tendency at present is to make 14 or 15 years the age at which a child may withdraw from school, provided he has certain educational attainments. The standard is low in most States, only a few requiring so much as the completion of the fifth grade. The tendency, however, is to strengthen the required educational qualifications regardless of age limit. A committee representing the division of special education of the National Education Association took a very advanced position in 1910 by recommending that [1] the compulsory education laws recognize the difference between the chronological and the physiological age of a child, that the school age limit of each individual child be determined by maturity tests only, no matter whether the child is, in years, above or below the age standard; in other words, that a child's actual age be determined by physio-psychological data corresponding to the normal standard of the age limit required by law, and that all children or persons failing to meet such maturity tests shall be permanently under public supervision and control. This, viewed in the light of present conditions in most States and cities, would seem ideal rather than practicable, though an ideal, no doubt, worth attempting to realize.

PENALTIES.

No law can be properly enforced unless proper penalties are provided. In most States fines upon parents are, no doubt, sufficiently great to secure a proper enforcement of the law, but in only a few instances are penalties provided for school boards and attendance officers for neglect of duty. In many instances the laws are not enforced because officers and school officials are negligent. In 1909 J. D. Erdliff, who made a report to the State Teacher' Asssociation of Missouri regarding compulsory education in that State, found that 26 cities failed to enforce the law, not because of any serious defect in it, but because of the indifference and neglect of the school authorities in these cities.

ANNUAL PERIOD OF ATTENDANCE.

Many of the early laws did not prescribe a definite time for attendance each year, but, instead, specified so many consecutive weeks, without stating when the period was to begin. This led to confusion, and it was often difficult to determine when a child had attended the prescribed time. Those laws that permit children to attend a certain proportion of the time are also difficult to enforce so as to secure regular attendance. To be effective a definite annual period should be prescribed. Most States, however, now require attendance for the full period school is in session in the district.

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[1] Proc. Nat. Ed. Assoc., 1910, p. 1034.

CHILD LABOR.

It is not the purpose to discuss the child-labor laws and their enforcement, but rather to call the attention of the reader to some questions regarding child labor that need solution. Owen R. Lovejoy, general secretary of the National Child Labor Committee, says that the following questions are still unsettled and need careful consideration:[1]

1. What classes of children should be entirely eliminated as a factor in the industrial problem?
2. From what industries should all children be eliminated?
3. What regulations should govern the conditions of the children who may wisely be employed?
4. What is to be done with those excluded from industry?

CONCLUSION.

In closing this paper, the following summary is given of the most important factors in their enforcement:

1. An annual school census taken by the school authorities of the city or district.
2. Prompt reports by teachers of public and private schools of all absentees not legally excused.
3. Properly qualified attendance officers who give all their time and attention to the enforcement of the law, and also school visitors in cities having a large foreign or negro population.
4. State agents to see that the laws are enforced.
5. Special schools for truants and pupils irregular in attendance.
6. Relief for indigent parents having children of compulsory age.
7. A definite annual period of attendance.
8. Well-enforced child-labor laws.
9. Employment certificate made to employer and not to be used by child when seeking a new position.
10. Proper penalties on all concerned in the enforcement of the law.

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[1] Annals of Am. Acad., vol. 33, sup., p. 50.

Proportion of children 6 to 14 years of age attending school.[1]

States.	All classes.	Native white.		Foreign-born white.	Negro.
		Native parentage.	Foreign or mixed parentage.		
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
Alabama	61.1	70.0	78.1	70.2	49.3
Arizona	67.2	80.4	72.1	61.6	81.5
California	86.9	87.4	88.1	82.3	88.4
Colorado	86.7	86.4	88.4	81.7	85.4
Connecticut	92.3	92.6	92.6	89.2	90.5
Delaware	81.9	83.4	83.4	75.9	76.0
Florida	66.0	72.1	76.1	63.5	57.1
Georgia	65.6	74.8	84.5	76.0	55.4
Idaho	82.1	82.0	84.1	76.2	....
Illinois	87.8	88.2	88.0	83.8	83.0
Indiana	88.2	88.4	87.6	80.6	87.7
Iowa	90.7	90.8	90.8	82.0	89.3
Kansas	88.2	88.3	89.1	76.7	84.6
Kentucky	76.0	76.3	87.1	83.8	70.3
Louisiana	54.6	68.4	69.7	50.7	37.4
Maine	89.2	90.3	88.4	81.0	90.7
Maryland	80.2	83.3	80.0	75.5	70.7
Massachusetts	92.9	93.9	93.1	88.1	92.0
Michigan	90.7	91.3	90.6	86.8	89.4
Minnesota	88.8	88.8	89.2	86.0	90.0
Mississippi	72.2	84.2	82.9	44.0	63.7
Missouri	85.2	85.5	86.7	80.7	75.9
Montana	82.7	83.5	86.0	76.1	83.1
Nebraska	90.2	90.1	90.8	85.1	87.9
Nevada	83.2	86.3	88.8	76.7	....
New Hampshire	91.2	92.2	91.3	85.5	....
New Jersey	88.6	89.6	88.7	83.8	85.7
New Mexico	72.9	76.9	75.1	56.6	73.8
New York	90.0	89.9	90.6	88.3	87.1
North Carolina	71.7	75.7	84.0	64.8	64.0
North Dakota	80.7	82.7	81.5	70.0	....
Ohio	89.8	90.3	89.2	84.0	87.2
Oklahoma	81.3	82.2	85.5	75.8	76.5
Oregon	85.5	85.1	87.3	82.7	77.5
Pennsylvania	86.5	88.1	84.8	79.6	82.9
Rhode Island	88.8	91.2	89.0	82.4	87.7
South Carolina	62.6	72.1	81.4	72.2	56.1
South Dakota	83.3	84.1	84.6	72.9	86.4
Tennessee	72.1	75.2	83.6	78.9	60.1
Texas	70.2	74.3	60.3	38.4	64.5
Utah	85.6	85.4	87.9	83.5	81.1
Vermont	92.9	93.1	93.3	89.3	87.6
Virginia	68.3	73.2	80.0	71.3	58.7
Washington	85.7	85.9	86.9	83.9	81.3
West Virginia	82.5	83.0	82.9	66.1	72.2
Wisconsin	89.9	90.8	89.7	84.1	88.9
Wyoming	84.5	84.9	85.9	76.4	84.7

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[1] Census Bulletin: Reprint of chap. 7, abstract of the Thirteenth Census, 1910, p. 228.

School attendance according to percentages.

High—90 and over.—Connecticut, Iowa, Massachusetts, Michigan, Nebraska, New Hampshire, New York, and Vermont.

Medium—80 to 90.—California, Colorado, Delaware, Idaho, Illinois, Indiana, Kansas, Maine, Maryland, Minnesota, Missouri, Montana, Nevada, New Jersey, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, Washington, West Virginia, Wisconsin, Wyoming.

Low—70 to 80.—Kentucky, Mississippi, New Mexico, North Carolina, Texas.

Very low—Below 70.—Alabama, Arizona, Florida, Georgia, Louisiana, South Carolina, Virginia.

School attendance in 1910–11.

Divisions and States.	Average number of days the schools were kept.	Average number of days attended by each pupil enrolled.	Per cent.	Rank.
United States	156.8	111.8	71.3	....
North Atlantic Division	179.8	142.4	79.2	1
Western Division	159.3	119.8	75.2	2
North Central Division	164.3	121.3	73.8	3
South Atlantic Division	130.6	85.1	65.2	4
South Central Division	127.8	79.1	61.9	5
Oregon	138.0	120.7	87.5	1
Massachusetts	185.0	153.3	82.9	2
Utah	159.0	131.6	82.8	3
District of Columbia	180.5	144.5	80.0	4
Pennsylvania	170.4	136.2	79.9	5
Indiana[1]	147.0	116.4	79.2	6
New York	186.9	147.6	78.9	7
New Hampshire	168.5	132.1	78.5	8
Illinois	171.0	134.0	78.3	9
Vermont	160.0	124.5	77.8	10
California[2]	173.6	134.0	77.19	11
Connecticut	184.9	142.7	77.17	12
New Jersey	183.0	140.2	76.6	13
Michigan	170.0	127.5	75.0	14
Rhode Island	194.0	145.5	75.0	15
Maine	163.8	122.7	74.9	16
Wyoming	140.9	105.3	74.7	17
Kansas	156.0	115.7	74.2	18
Minnesota	161.3	118.7	73.6	19
Washington	172.3	127.4	73.4	20
Iowa	172.0	126.1	73.3	21
Ohio	165.5	120.8	73.0	22
Nevada[2]	145.3	105.4	72.54	23
Idaho	140.0	101.5	72.5	24
Montana	156.9	113.1	72.1	25
Wisconsin	179.6	128.5	71.6	26
Missouri	155.4	109.0	70.1	27
Nebraska	168.6	118.0	70.0	28
Florida	116.2	80.7	69.5	29
West Virginia	135.0	92.8	68.7	30
Colorado	156.0	106.5	68.3	31
Tennessee	133.0	90.4	67.9	32
North Dakota	151.0	101.5	67.2	33
South Carolina	92.8	61.6	66.4	34
Texas	135.1	89.6	66.3	35
North Carolina	104.1	67.8	65.2	36
Louisiana	135.2	87.1	64.5	37
New Mexico	115.0	74.1	64.4	38
South Dakota	152.0	97.3	64.0	39
Virginia	131.5	84.6	64.3	40
Arizona[2]	135.5	87.0	64.2	41
Delaware[1]	172.5	108.2	62.7	42
Arkansas	113.9	71.9	63.1	43
Georgia	151.4	94.4	62.4	44
Alabama	115.2	71.2	61.8	45
Maryland	185.0	113.4	61.3	46
Oklahoma	130.0	76.3	58.7	47
Mississippi[1]	120.0	66.9	55.8	48
Kentucky	131.8	72.1	54.7	49

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[1] Statistics, 1909–10.

[2] Approximate.

I. *Compulsory attendance in the United*

States.	Compulsory age.	Annual period of required attendance.	Reasons for exemption.
Alabama	0	No compulsory law	
Arizona Sch. Laws, 1912.	8-16	Full time public school is in session.	(1) Physical or mental incapacity as declared by a competent physician approved by the board; (2) completion of grammar-school course; (3) employment certificate issued to a child 14 years of age who can read and write.
Arkansas Sch. Laws, 1911.	[1] 8-16	Not less than one-half the time public school is in session.	(1) If parent is not able to provide proper clothing; (2) if child is physically or mentally incapacitated; (3) if there is no public school within 2½ miles; (4) if the labor of the child is absolutely necessary for the support of the family; (5) if the child has completed a common-school course. Law does not apply to 41 counties.
California Sch. Laws, 1911.	8-15	Full time public schools are in session.	(1) If child is physically or mentally incapacitated; (2) if child is between 12 and 15 and holds a work certificate; (3) if no public school is within 2 miles of child's residence; (4) if the child has completed the grammar-school course; (5) if circumstances render attendance impracticable or dangerous to health.
Colorado Sch. Laws, 1912.	8-16	Entire time public schools are in session.	(1) If child is over 14 and has completed the eighth grade; (2) if his help is necessary for his own or his parents' support; (3) if for the best interests of the child; (4) bodily or mental incapacity.
Connecticut Sch. Laws, 1912.	7-16	Full time the public school is in session.	(1) If child is lawfully employed at labor at home or elsewhere; (2) if parent is unable to provide suitable clothing; (3) if the child's mental or physical condition is such as to render its instruction inexpedient or impracticable.
Delaware Sch. Laws, 1909.	7-14	5 months each year; may be reduced to 3 at the annual meeting.	(1) Mental, physical, or other urgent reasons approved by the county superintendent; (2) if there be no public school in session within 2 miles.
Dist. Columbia U. S. Stat. L., vol. 34, Pt. I, 1905-1907.	8-14	During entire term	(1) Has acquired common-school branches; (2) physical or mental incapacity.
Florida	0	No compulsory law	
Georgia	0	do	
Hawaii Sch. Laws, 1911.	6-16		(1) No school within 4 miles and no suitable transportation; (2) physical or mental incapacity; (3) completion of grammar grades and 13 years old; (4) 15 years old and employed.
Idaho Sch. Laws, 1911.	8-18	Entire school year	(1) If child is over 14 years of age and has completed the eighth grade, and its help is necessary for its own or its parents' support, and it can be shown that it is for the best interest of the child; (2) if the child's health does not permit attendance.
Illinois Sch. Laws, 1912.	7-16	Entire time school is in session; not less than 6 months.	(1) If child's physical or mental condition renders attendance impracticable; (2) if child is excused for cause temporarily; (3) if between 14 and 16 and necessarily employed.

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[1] 16-20 if not regularly employed.

States—Ages, period required, exemptions, etc.

Relief to children unable to attend on account of poverty.	Part-time instruction for children employed.	Instruction authorized in lieu of public schools.	Compulsory education for deaf, dumb, and blind children.
......	......	......	
......	......	Private and parochial schools regularly organized and taught by competent teachers. Home instruction under competent teacher in common-school branches.	
School board shall furnish books.	......	Private, parochial, or parish schools not less than one-half the time the public schools are in session.	
......	......	Private schools giving instruction in branches usually taught in primary and grammar schools; home instruction in common-school branches.	Parents of deaf, dumb, or blind children must send them to suitable school for a term of 5 years, unless excused by the board of trustees for physical incapacity. The board of education may establish separate classes in the primary and grammar grades for deaf children between 3 and 21 if there are 5 or more in the district.
Truant officers shall report such cases to authorities charged with relief of the poor who shall afford suitable relief.	Where there is no public or parochial evening school, an age and school certificate for a child under 16 shall not be approved unless said child can read at sight and write legibly simple sentences.	Private or parochial school for the entire time during which the public schools are in session.	
......	No person between 14 and 16 who can not read and write shall be employed in any town where public evening schools are established unless he attends evening school.	Instruction in the studies taught in the public schools. Teacher shall keep a register of attendance, open to inspection, and shall make reports to the State board of education.	
......	......	Private school for the compulsory period, legally qualified private teacher, or other means approved by county superintendent.	
......	......	Instruction in same branches for a like period of time as in the public schools. A certificate of attendance signed by the person in charge of such schools is required.	
......	......	......	
......	......	......	
......	......	Private school......	
......	......	Private or parochial school; the same period as the public-school session.	
......	......	Private school, at least 6 months; instruction for a like period in the elementary branches by a competent person.	

I. *Compulsory attendance in the United States*—

States.	Compulsory age.	Annual period of required attendance.	Reasons for exemption.
Indiana Sess. Laws, 1913.	[1] 7-14	For a term not less than that of public school.	Physically or mentally incompetent, upon certificate of a reputable physician.
Iowa Sess. Laws, 1913. Sch. Laws, 1911.	7-16	At least 24 consecutive weeks, commencing with the first week of school after the 1st day of September.	(1) If child lives more than 2 miles from any school, unless transported free; (2) if excused for sufficient reasons by any court of record; (3) if attending religious service or receiving religious instruction.
Kansas Sch. Laws, 1911.	8-15	Full period school is in session.	(1) Any child 14 years of age able to read and write and regularly employed is not required to attend for more than 8 consecutive weeks in one year; (2) if child has graduated from the common schools; (3) if physically or mentally incapacitated.
Kentucky Sch. Laws, 1912.	([2])	Full period public schools are in session.	(1) Unfit mentally and physically to attend school, upon certificate of health officer; (2) over 14 and lawfully employed.
Louisiana (Parish of Orleans only.) Sch. Laws, 1912.	8-16	Full time.	(1) If bodily or mental condition of child is such as to render attendance inadvisable; (2) completion of the prescribed elementary course; (3) no public school within 20 blocks of child's home; (4) over 14 and regularly employed for 6 hours a day.
Maine Sch. Laws, 1913.	7-15	Time school is in session.	(1) Necessary absence may be excused by the superintendent of schools or the superintending school committee; (2) physical or mental unfitness for school work.
Maryland Sch. Laws, 1912.	[3] 8-14	Not less than 4 months; entire school session in Baltimore.	(1) Cases of necessary absence may be excused by superintendent or principal; (2) mentally and physically incompetent; (3) shall apply only to those counties where the board of county commissioners shall approve the same and appoint an attendance officer; (4) law is mandatory in Baltimore city only; 6 counties are exempt; other counties may adopt law.
Massachusetts Sch. Laws, 1911.	[4] 7-14	Entire time public day schools are in session.	(1) School authorities may excuse necessary absences; (2) if child has already acquired branches required by law; (3) physically or mentally incompetent.

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[1] And 14-16, if not employed.

[3] 7-16 in cities; 7-12 in country districts.

Ages, period required, exemptions, etc.—Continued.

Relief to children unable to attend on account of poverty.	Part-time instruction for children employed.	Instruction authorized in lieu of public schools.	Compulsory education for deaf, dumb, and blind children.
The school trustees of the district shall furnish temporary aid.	If vocational schools are established for children over 14 who are engaged in regular employment, the board of education may require attendance not less than 5 hours per week.	Private or parochial school for a period equal to that of the public school.	Any blind or deaf child between 8 and 16 who can not secure an education in the public schools of the district must attend the Indiana School for the Blind or the Indiana School for the Deaf.
		Private or parochial school where the common-school branches are taught for at least 24 consecutive weeks. Equivalent instruction by a competent teacher.	
		Private, denominational, or parochial school taught by a competent instructor.	Every person having control of any deaf, dumb, or blind child between the ages of 7 and 21 years, inclusive, shall send such child to some suitable school.
		Private or parochial school for no shorter period than that of the city in which the child resides. Home instruction subject to the same examinations as other pupils of the city.	
		Private or parochial school during the time the public schools of the city are in session. Instruction at home in the common branches.	
		An approved private school; certificate of attendance must be filed with the school officials of the town. Equivalent instruction elsewhere.	
		Schools other than public, during term of compulsory attendance.	Every deaf and blind child between 6 and 16 is required to attend some school for the deaf or blind for 8 months, unless receiving instruction elsewhere.
Truant officers in cities and overseers of the poor in towns shall provide for the temporary care of indigent children under 16. Such children may be placed in the care of a suitable person or committed to the custody of the State board of charity.	White public evening school is maintained, any minor over 14 who can not read and write shall not be employed unless he is a regular attendant at such evening school, unless physical condition will not permit such attendance in addition to daily labor.	School committees shall approve a private school only when the instruction in all the studies required by law is in the English language, and when such instruction equals the public schools in the same city or town.	No physical or mental condition which is capable of correction, or which renders the child a fit subject for special instruction at public charge in institutions other than public day schools, shall avail as a defense.

[3] 14-16 if not employed.

[4] And 14-16 if not able to read and write.

I. *Compulsory attendance in the United States*—

States.	Compulsory age.	Annual period of required attendance.	Reasons for exemption.
Michigan Sch. Laws, 1911.	7-16	During the entire school term.	(1) If child has received an eighth-grade diploma from the public schools; (2) if child is physically unable to attend school; if over 14 and services are essential to the support of parents; (4) if child is under 9 and does not reside within 2½ miles of some public school; (5) children from 12 to 14 while in attendance at confirmation classes for a period not to exceed 5 months in either of said years.
Minnesota Sch. Laws, 1911.	8-16	Entire time public schools are in session.	(1) Bodily or mental condition such as to prevent attendance or application to study; (2) completion of the eighth grade; (3) no public school within reasonable distance, or conditions of the weather make impossible for child to attend; (4) if child is over 14 whose help may be required at home, he may be excused from Apr. 1 to Nov. 1; this does not apply to cities of the first or second class; (5) may be absent on such days as child attends upon instruction according to the ordinances of some church.
Mississippi	0	None.	...
Missouri Sch. Laws, 1911.	[1] 8-14	Not less than three-fourths of the entire time school which the child attends is in session.	(1) Extreme destitution of parent; (2) child mentally or physically incapacitated; (3) no public school within 2½ miles; (4) completion of common-school course.
Montana Sch. Laws, 1913.	[1] 8-14	Full time of school session (not less than 16 weeks).	(1) If bodily or mental condition of child does not permit its attendance; (2) if in opinion of county superintendent the distance is too great.
Nebraska Sch. Laws, 1911.	7-15; 7-16 in cities	Not less than two-thirds of entire time school is in session; not less than 12 weeks.	(1) If 14 and regularly employed to support himself or family; (2) incapacitated bodily and mentally; (3) if there is no school within 2 miles, unless free transportation is provided.
Nevada Sch. Laws, 1911.	8-16...	During time public school is in session.	(1) Physically or mentally incompetent; (2) completed the eighth grade; (3) if the child's labor is necessary for its own or its parents' support; (4) if child's residence is at such distance from the public school as to render attendance unpracticable.
New Hampshire Sch. Laws, 1911.	8-14 [2]..	Full time public school is in session.	(1) Physically or mentally incompetent; (2) completion of the common English branches.

[1] And 14-16 if not regularly employed.

[2] 14-16 if not able to read and write.

Ages, period required, exemptions, etc.—Continued.

Relief to children unable to attend on account of poverty.	Part-time instruction for children employed.	Instruction authorized in lieu of public schools.	Compulsory education for deaf, dumb, and blind children.
If parents can not support a child of compulsory age, the board of education may grant such relief as will enable the child to attend school. Not more than $3 a week shall be paid a family for one child nor more than $6 a week for the children of any one family.	....	Private or parochial school in which the common-school branches are taught.	Parents having control of deaf children between 7 and 18 must send them to some school for the deaf. Any children between 7 and 19 with defective vision must be sent to the Michigan School for the Blind unless the child is educated in a private or parochial school, or is physically or mentally incompetent, or if over 17 is being taught a trade, or if over 18 is employed at the Michigan School for the Blind.
....	....	Private school for the entire time the public schools are in session.	
....	....	....	
....	....	Private, parochial, or parish school for not less than three-fourths of the time the school which the child attends is in session.	
The poor authorities shall furnish indigent children necessaries to attend school. If parent refuses aid, the child may be committed to the industrial school.	....	Private or parochial school for time said school is in session; not less than 16 weeks; instruction at home by qualified teacher.	All deaf and blind children of lawful school age shall be sent to the Institute for Deaf and Blind 6 months of each school year for a period of 8 years or until exempt by law, unless taught in same branches at some place.
....	A child 14 years of age employed may be required to attend a public evening school for not less than 2 hours a day, 3 days a week, for 20 weeks.	Private or parochial school, the authorities of which shall keep records. Instruction at home by qualified person.	All blind, deaf and dumb persons between the ages of 7 and 18 years are required to attend the institute for the blind or the school for the deaf, unless receiving instruction elsewhere.
....	....	Private school; home instruction in public school branches.	
....	....	Private school approved by the school board for a number of weeks equal to that in which the public schools are in session. Record of attendance shall be kept.	

I. *Compulsory attendance in the United States*—

States.	Compulsory age.	Annual period of required attendance.	Reasons for exemption.
New Jersey. Sch. Laws, 1911; Sess. Laws, 1913.	7-14[1]	Entire time public school is in session.	(1) If above 15 and has completed the grammar-school course and is regularly employed. If child be under 17 and has completed the grammar-school course and is not regularly employed such child shall attend high school or manual-training school; (2) bodily or mental incapacity; (3) if above 14 and it is necessary for the child to be employed.
New Mexico. Sch. Laws, 1909.	7-14	do	(1) Physical unfitness, certified by a regular practicing physician; (2) if child lives more than 3 miles from a public school.
New York. Sch. Laws, 1912; Sess. Laws, 1913.	7-14[2]	In cities at least 160 actual days. In other districts time school is in session from Oct. 1 to June 1.	(1) If over 14 and an employment certificate has been granted; (2) physical or mental incapacity.
North Carolina. Sess. Laws, 1913.	8-12	4 months	(1) Physically or mentally incompetent as attested by a legally qualified physician; (2) if child resides 2½ miles from a public school; (3) if, because of extreme poverty, the services of the child are necessary; (4) if the parent is not able to provide books or clothing.
North Dakota. Sch. Laws, 1911.	8-15	Entire time public schools are in session.	(1) If necessary for the child to support the family; (2) completion of branches taught in the public schools; (3) physical or mental condition such as to render attendance impracticable; (4) if there is no school within 2½ miles, except where transportation is furnished for pupils residing within 5 miles.
Ohio. Sess. Laws, 1913; General Statutes, 1910.	8-16[3]	Full time; in no case less than 28 weeks.	Physically or mentally incompetent

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[1] And 14-16 unless child attended 130 days during preceding year and has completed 5 five grades.

[3] And 14-16 if not regularly employed.

Ages, period required, exemptions, etc.—Continued.

Relief to children unable to attend on account of poverty.	Part-time instruction for children employed.	Instruction authorized in lieu of public schools.	Compulsory education for deaf, dumb, and blind children.
....	....	Any school in which at least the common school branches are taught.....	In each school district where there are 10 or more blind or deaf children who are not now cared for or who can not be cared for in any institution a special class or classes shall be organized for their education.
....	....	May attend private or denominational school if the teaching is equal to that of the public school of the district.	Attendance is required at New Mexico asylum of all deaf and dumb children between 8 and 21. County superintendent shall report all such children to the superintendent of the asylum.
....	Every boy between 14 and 16 in a city of the first or second class having an employment certificate but not having completed the course of study for the elementary schools, shall attend public or other evening schools for not less than 6 hours each week for at least 16 weeks, or upon a trade school for 8 hours a week for 16 weeks.	Instruction elsewhere equivalent to that given in the public schools; attendance must be for a like period.	
....	....	Continuous attendance upon any private or church school taught by competent teachers. Said schools must keep records.	
....	....	Private or parochial school approved by the county superintendent, teaching common-school branches.	Every parent or other person having control of any deaf, blind, or feeble-minded child between 7 and 21 is required to send for school year such deaf child to the school for the deaf at Devils Lake; and such blind child to the school for the blind at Bathgate, and such feeble-minded child to the institution at Grafton
School board must furnish such relief as may be necessary.	If the board of education establishes part-time day school for the instruction of employed youths over 15, such youths who have not completed the eighth grade must continue their schooling until 16. If regularly employed they are required to attend not more than 8 hours a week between 8 a. m. and 5 p. m during the school term.	Private or parochial school for the full time school is in session; in no case for for less than 28 weeks. Instruction at home by a qualified person.	

[8] Females, 8-16; males, 8-15; and 8-16 if not employed

I. *Compulsory attendance in the United States*—

States.	Compulsory age.	Annual period of required attendance.	Reasons for exemption.
Oklahoma Sch. Laws, 1912.	8-16	From 3 to 6 months in the discretion of the board.	(1) Mental or physical disability; (2) proficient in the standard studies; (3) employment upon certificate.
Oregon Sch. Laws, 1911.	9-15	Term of district	(1) Physically or mentally incompetent; (2) children between 9 and 10 living 1½ miles and children over 10 living more than 3 miles from a public school; (3) completion of common-school branches.
Pennsylvania Sch. Laws, 1911.	8-16	Entire public school term. May be reduced by the board of school directors to not less than 70 per cent of school term.	(1) Mental, physical, or other urgent reasons; (2) if child between 14 and 16 can read and write intelligently and is regularly employed.
Porto Rico Sch. Laws, 1911.	8-14	Full time	(1) Completion of course of study; (2) no school within reasonable distance.
Rhode Island Sch. Laws, 1910.	7-15	Entire time public schools are in session.	(1) Completion of studies taught in the first 8 years in public schools; (2) 14 years of age and lawfully employed; (3) physically or mentally incompetent.
South Carolina	....	No compulsory law	....
South Dakota Sch. Laws, 1911.	8-14	Entire term public schools are in session; district board may decrease to 16 weeks, 12 consecutive.	(1) Completion of common school branches; (2) physically or mentally incompetent.
Tennessee Sess. Laws, 1913.	[1] 8-14	80 consecutive days, or full term if term is less than 80 days. Full term in separate school systems having a population of 5,000.	(1) Extreme destitution of parents; (2) mentally or physically incapacitated; (3) no school within 2 miles of child's residence and public transportation not provided; (4) completion of elementary school course.
Texas	....	No compulsory law.	....
Utah Sch. Laws, 1911; Sess. Laws, 1907.	8-16	At least 20 weeks, 10 consecutive. In cities of first and second class 30 weeks, 10 consecutive.	(1) Completion of branches taught in the district schools; (2) physically or mentally incompetent; (3) no school within 2½ miles of child's residence; (4) services necessary to support a mother or an invalid father.

[1] And 14-16 if not employed and unable to read and write.

Ages, period required, exemptions, etc.—Continued.

Relief to children unable to attend on account of poverty.	Part-time instruction for children employed.	Instruction authorized in lieu of public schools.	Compulsory education for deaf, dumb, and blind children.
If any widowed mother needs the support of her child under 16, on certificate of the county superintendent the county commissioners may pay to child such sum as may be necessary in lieu of wages.	...	Private or other schools for same term as public schools.	
...	...	Private or parochial school for same period as public school. Instruction from parent or private teacher, with permission from county superintendent.	Deaf, dumb, and blind children between 8 and 16 are required to attend one of the State institutions, unless taught elsewhere.
If any child is unable to attend school on account of lack of clothing or food, such case shall be reported to any suitable relief agency or to the proper directors of the poor for investigation and relief.	...	Private school, whose work is in compliance with the provisions of the compulsory attendance act. Instruction by properly qualified private teacher.	
...	...	Any school of recognized standing.	
...	...	A private school or private instruction, if school committee are satisfied that such instruction is substantially equal to that required by law.	Attendance of deaf and dumb children between 7 and 18 at Rhode Island Institute for the Deaf is compulsory unless the child is receiving instruction elsewhere.
...	...	...	
...	...	Instruction by a competent person at a private day school for the period the public schools are in session.	Whenever any deaf or blind child of proper age is being deprived of proper education, the county judge shall order such child sent to some public or private school for the education of the deaf or blind. Every county superintendent or city superintendent shall send the names of all deaf and blind children to the superintendent of such schools.
...	...	Private or parochial school.	
...	...	...	
...	...	Private school for time fixed by law. Home instruction in branches and for period fixed by law.	Parents having control of deaf, dumb, and blind children between 8 and 18 shall send them to the Utah School for the Deaf and the Utah School for the Blind for at least 6 months in each year unless taught at home or unless they have acquired the legal branches or are physically or mentally incompetent.

I. *Compulsory attendance in the United States—*

States.	Compulsory age.	Annual period of required attendance.	Reasons for exemption.
Vermont Sch. Laws, 1912.	8–16	At least 150 days; for entire term if longer than 150 days. If child over 16 is enrolled in a public school, it must attend regularly.	(1) Physically or mentally incompetent; (2) completion of branches taught in the elementary schools; (3) if legally excused.
Virginia Sch. Laws, 1911.	8–12	At least 12 weeks, 6 consecutive.	(1) District school trustees may excuse for cause; (2) weak in body and mind; (3) can read and write; (4) lives more than 2 miles from the nearest public school or more than 1 mile from line of school wagon route; (5) act does not apply to any county, city, or town until qualified voters avail themselves of the provisions thereof.
Washington Sch. Laws, 1909; Sess. Laws, 1909.	[1] 8–15	Full time public school is in session.	(1) Physically and mentally incompetent; (2) reasonable proficiency in branches taught in the first 8 grades of the public schools.
West Virginia Sch. Laws, 1911.	8–15	24 weeks, beginning with the opening of school.	(1) Sickness or death in pupil's family; (2) other reasonable cause; (3) no school within 2 miles.
Wisconsin Sch. Laws, 1911.	[2] 7–14	In cities of first class, full period; in all other cities not less than 8 months; in towns and villages, not less than 6 months.	(1) Physically or mentally incompetent; (2) no schoolhouse within 2 miles, unless transportation is provided; (3) completion of course of study for first 8 grades.
Wyoming Sch. Laws, 1913.	7–14	Entire time public school is in session.	(1) Invalids or others to whom the schoolroom might be injurious; (2) pupils to whom the provisions of this act might work a hardship, excuse to be granted by district board; (3) pupils excluded for legal reasons.

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[1] And 15–16 if not regularly employed.

II. *Compulsory attendance—Officers,*

States.	Officers charged with enforcement.	Powers and duties of truant officers.	By whom officers are appointed.	Truant and parental schools—Establishment.
Arizona Sch. Laws, 1912.	Deputy sheriff, constable, city marshal, or attendance officer.	Inquire into all cases of neglect of duties; secure prosecution.		
Arkansas Sch. Laws, 1911.	Attendance officers.	Serve notice upon parents; arrest without warrant; serve subpoenas.	Board of education.	In any city or district having 10,000 or more population the board may establish truant schools.

Ages, period required, exemptions, etc.—Continued.

Relief to children unable to attend on account of poverty.	Part-time instruction for children employed.	Instruction authorized in lieu of public schools.	Compulsory education for deaf, dumb, and blind children.
....	....	Otherwise furnished the instruction required by law.	Board of civil authority of towns must return the number of deaf, dumb, and blind between 5 and 14 to the county clerk and he report to the governor, who designates beneficiaries to be sent to institutions for the deaf, dumb, and blind.
....	Two weeks' attendance at half-time or night school shall be considered equivalent to an attendance of one week at a day school.	Private school	
....	....	Private school for time public schools are in session.	Parents of the deaf or blind are required to send them each year to the State school for the deaf and the blind.
....	....	Instructed elsewhere if thoroughly and systematically for legal period of time.	
....	Whenever any evening school or continuation school is established in any town for minors between 14 and 16 working under permit, every such child shall attend not less than 5 hours per week for 6 months in each year. Every employer is required to make a reduction in hours of not less than the number of hours the minor is required to attend school.	Approved private or parochial schools, keeping a record of attendance open to the inspection of the truant officer.	Upon application by the board of education of any village or city to the State superintendent he may grant permission to establish and maintain one or more schools for the deaf and blind. Any parent having a child between 6 and 16 incapacitated for attending a common school shall send such child to some special school for at least 8 months during any school year.
....	....	Private or parochial school for period public schools are in session.	

[1] And 14–16 if not regularly employed.

parental schools, penalties, etc.

Period of commitment of child.	Paroles.	Penalties for violations.	Census.	Teachers reports of absence
....	....	Parent, $5 to $25; officers not more than $50.	Census marshal shall take census of all children, showing numbers attending public school, private school, and no school. Required to visit each house.	
....	....	Parent, $10 to $25	....	

II. *Compulsory attendance—Officers,*

States.	Officers charged with enforcement.	Powers and duties of truant officers.	By whom officers are appointed.	Truant and parental schools—Establishment.
California........ Sch. Laws, 1911.	Attendance officer, board of education, or board of trustees; 1 attendance officer required for each 20,000 census children in any city.	....	Board of education.	Board of education of any school district having 600 census children may establish parental schools; two or more districts may unite.
Colorado......... Sch. Laws, 1912.	Truant officer.....	Vested with police powers, authority to enter factories, etc., where children are employed; shall institute proceedings against violators; shall keep a record of his transactions; shall petition the county court to inquire into cases of habitual truancy.	Board of school directors.	Shall be established in each city having 100,000 inhabitants or more; may be established in cities having a population between 25,000 and 100,000. Parent and guardian must bear cost of maintenance.
Connecticut..... Sch. Laws, 1912.	Truant officers, the police in cities, and bailiffs, constables, and sheriffs.	Police, bailiffs, constables, and sheriffs shall arrest all boys between 7 and 16 who habitually wander about the streets or loiter in public places during school hours and may question any boy under 16 during such hours.	By every town and the mayor and alderman of every city.	Any habitual truant may be committed to any institution of instruction or correction in the city, borough, or town, or if the child be not less than 10, to a State institution.
Delaware........ Sch. Laws, 1909.	Attendance officer.	Arrest without warrant those who fail to attend school; proceed against offending parents.	Board of education and school committees.	Truant and incorrigible pupils may be sentenced for a definite time to proper State institution.
Dist. Columbia.. U. S. Stat. L., vol. 34, Part I, 1905–1907.	Truant officers....	Carry out provision of this act; visit places where minor children are employed; demand as often as twice a year from all employers a list of children employed, with their ages.	Board of education.	Board of education may establish ungraded schools for habitual truants or for incorrigibles.
Florida..........	None..............	No compulsory law....	....	....
Georgia..........	.....do............	.....do................	....	....
Hawaii.......... Sch. Laws, 1911.	Deputy sheriff....	Visit not less than once each week each public school to secure the names of children absenting themselves.	....	....
Idaho........... Sch. Laws, 1911.	Probation officer..	Serve notice upon parents to place such children in school as been reported by the county superintendent.	Probate courts	....
Illinois.......... Sch. Laws, 1912.	Truant officers....	Report all violations to the board of education, enter complaint against and prosecute all persons who appear guilty of such violation, arrest truants and any child of school age that habitually haunts public places.	Board of education.	In cities having 100,000 population or more, one or more truant schools shall be established; may be established in cities having 25,000 to 100,000 population.

parental schools, *penalties*, *etc.*—Continued.

Period of commitment of child.	Paroles.	Penalties for violations.	Census.	Teachers' reports of absence.
Not to exceed remainder of current year.	Parent may give bond that child will attend regularly.	Parent, not more than $10 for first offense or imprisonment not more than 5 days; not less than $10 for each subsequent offense, or imprisonment 5 to 25 days.	....	
Until 14 years of age unless sooner discharged.	Board of education shall establish rules, but no child may be paroled in less than 4 weeks of commitment.	....	Secretary of board of directors shall take a census of all persons over 6 and under 21.	
Not more than 3 years.	....	Parent, fine not to exceed $5; each week's failure is a distinct offense.	Committee of each school district shall ascertain the name and age of every person over 4 and under 16, and whether attending school or employed.	
....	....	Parent, not more than $2 for first offense, nor more than $5 for each subsequent offense.	Assessors make a list of all children between 7 and 14.	Each teacher at the close of each school month shall report to the attendance officer and the county superintendent the names of all absentees.
Until satisfactory evidence of improvement.	....	Parent, not more than $20.	....	
....	....	....	....	
....	....	....	....	
....	....	Parent, $5 to $50 or imprisonment not more than 2 months.	....	
....	....	Parent, fine not to exceed $300 or imprisonment not exceeding 6 months.	Clerk of board of trustees required to enumerate all children 8-18; teachers shall check enrollment list against census list.	At the beginning of each month teachers shall report to the county superintendent all unlawful absentees of the previous month.
May be committed until 14.	No child shall be paroled in less than 4 weeks of date of commitment.	Parents, $5 to $20, with cost of suit.	....	

II. *Compulsory attendance—Officers,*

States.	Officers charged with enforcement.	Powers and duties of truant officers.	By whom officers are appointed.	Truant and parental schools—Establishment.
Indiana Sch. Laws, 1913.	Truant officers.	May enter any place where children are employed to determine whether they are employed in violation of the child-labor law; enforce the provisions of the compulsory school act.	County school board or boards of separate districts and cities.	All common school corporations are empowered to maintain a separate school for incorrigible and truant children. Any habitual truant may be sentenced to one of the State institutions for boys or girls.
Iowa Sch. Laws, 1911; Sess. Laws, 1913.	Truant officers; board of directors. In school corporations of 20,000 or more the board of directors shall appoint one or more truant officers, and in other school corporations they may appoint truant officers.	Enforce the compulsory school law, sue, and institute criminal proceedings against violators.	Board of directors.	Board of directors of any school corporation may establish truant schools or set apart separate rooms for habitual truants. If child is habitually vagrant or incorrigible, he may be committed to one of the State industrial schools.
Kansas Sch. Laws, 1911.	Truant officers.	Shall see that the provisions of compulsory attendance act are observed; serve notices upon delinquent parents and make complaints, if necessary, in juvenile court.	Boards of education in cities of first and second class. County superintendents shall divide counties into truant districts, and the board of county commissioners shall, upon the nomination of the county superintendent, appoint a truant officer for each district.	....
Kentucky Sch. Laws, 1912; Sess. Laws, 1912.	Truant officers. In each city of the first, second, third, and fourth class at least 1 for 10,000 census children; 1 in each city with less than 10,000 school census children.	In cities of the first class, must not engage in any other occupation during time school is in session each year; shall examine into cases of truancy, serve notices on parents, proceed against delinquent children and parents, report all violations of the child-labor law.	Board of education.	The school officials of any city of the first or second class may establish one or more parental schools.
Louisiana (For parish of Orleans.) Sch. Laws, 1912.	Truant officers.	Have full police powers, authority to serve warrants and to enter factories and other places where children may be employed; serve notice on parents, make complaint against parents in proper court.	Board of school directors.	....

parental schools, *penalties*, *etc.*—Continued.

Period of commitment of child.	Paroles.	Penalties for violations.	Census.	Teachers' reports of absence.
....	....	Parent, $1 to $25 or imprisonment 2 to 90 days; attendance officers, $5 for each failure.	An annual school census is required; the enumerators shall record place and date of birth of every child enumerated.	
....	....	Parent, $3 to $20; any officer, $10 to $20.	Officers taking school census shall ascertain the number of children of ages 7 to 16, inclusive, in their respective districts, the number of such children not attending school, and if possible the cause of failure to attend school.	
....	....	Parent, $5 to $25......	The enumerator of the school census shall record the name, place, and date of birth of every child enumerated	Every teacher is required, before receiving each month's salary, to make a report to the county superintendent or to the city superintendent of all pupils who have been truant or habitually absent during the month
....	Child may be paroled subject to the visitation of a probation officer; no child shall be released in less than 4 weeks nor unless the court is satisfied that it will attend school regularly.	Parent, $5 to $20 for the first offense, $10 to $50 for every subsequent offense, and cost of suit.	Truant officers in cities of first, second, third, and fourth class shall furnish the principal of each school a list of all children between 7 and 17.	The principal of each school in cities of first, second, third, or fourth class shall report each day to the city superintendent or a truant officer all children absent without lawful excuse. Teachers shall report to subdistrict trustees and to county board the names of all parents failing to comply with compulsory school law.
....	....	Parent, not more than $5 for first offense nor more than $10 for each subsequent offense; in default of payment of fines, imprisonment not exceeding 5 days.	....	

II. *Compulsory attendance—Officers,*

States.	Officers charged with enforcement.	Powers and duties of truant officers.	By whom officers are appointed.	Truant and parental schools—Establishment.
Maine........... Sch. Laws, 1911.	Truant officers....	Inquire into all cases of neglect of duty on part of parents in not keeping their children in school; report result to the superintending school committee; prosecute any person neglecting to send his children to school, if so ordered by the school committee or superintendent; arrest and take pupils irregular in attendance to school, when directed by the school committee; may visit factories, etc., to ascertain whether minors under 15 are employed; may execute warrants.	Each city and town shall annually elect one or more truant officers.	On complaint of truant officer an habitual truant, if a boy, may be committed to the State school for boys, or if a girl, to the State industrial school for girls.
Maryland .... Sch. Laws, 1912.	.....do............	To arrest without warrant any truant and deliver truant to parent or teacher; visit all establishments where minors are employed.	Boards of school commissioners.	Parental schools may be established for habitual truants; 2 or more counties may jointly establish a parental school.
Massachusetts... Sch. Laws, 1911.	.....do............	Inquire into all cases arising under the compulsory attendance act; make complaints and serve legal processes relating to compulsory school attendance; have oversight of children placed on probation; apprehend and take to school, without warrant, any truant or absentee.	School committees.	County commissioners of each county, with exception, are required either separately or jointly with the commissioners of other counties to maintain a truant school.
Michigan........ Sch. Laws, 1911.	Truant officers; police.	Have all the powers of a deputy sheriff and perform the duties of truant officer in all districts of the county; county truant officer, when directed by the county commissioner to do so, shall inspect the outhouses in primary districts and order repairs.	County commissioners of schools; city boards of education; boards in graded school districts. In cities having organized police force, the police authorities shall detail one or more members at the request of school board as truant officers.	May be established in graded or city district by school board. Every boy between 10 and 16 and every girl between 10 and 17 convicted of habitual truancy or of frequenting disreputable places may be committed to a State institution.

parental schools, *penalties*, *etc.*—Continued.

Period of commitment of child.	Paroles.	Penalties for violations.	Census.	Teachers' reports of absence.
....	....	Parent, fine not to exceed $25, imprisonment not to exceed 30 days; any city or town neglecting to elect a truant officer and truant officer neglecting required duties, fine not less than $10 nor more than $50.	Superintendent of every town must make returns annually to the State superintendent of number of persons between 5 and 21.	
For such period as board may prescribe.	....	Parent, fine not exceeding $5 for each offense.	Police commissioners of Baltimore City shall make a record of name, age, color, and sex of every child between 6 and 16, and the place and year and month when such child last attended school.	The head teacher of every school shall report immediately to the school commissioners or to an attendance officer the names of all children who have been unlawfully absent 3 days.
Until 16 years of age.	A court by whom a child has been convicted may place such child on probation.	Parent, fine not more than $20.	A school census shall be made of all children between 5 and 15 years of age and of all minors over 14 who can not read at sight and write.	
....	....	Parent, $5 to $50 or imprisonment 2 to 90 days, or both.	....	The last school census shall be compared with the enrollment, and the names of children not in attendance must be reported to city truant officer or county commissioner.

II. *Compulsory attendance—Officers,*

States.	Officers charged with enforcement.	Powers and duties of truant officers.	By whom officers are appointed.	Truant and parental schools—Establishment.
Minnesota. Sch. Laws, 1911.	Truant officers	Investigate all cases of truancy or nonattendance, make complaints, serve notices, and attend to the enforcement of all laws and regulations respecting truant, incorrigible, and disorderly children and school attendance; may arrest without warrant; make reports to State superintendent.	Board of education.	School boards may maintain ungraded schools for truants, etc., between 8 and 16. If such school is inadequate to secure attendance the child may be committed to the State training school.
Mississippi	None	No compulsory law		
Missouri. Sch. Laws, 1911.	Truant officer	To serve notices upon parents; visit any establishment employing children; arrest without warrant all truants; require properly attested birth certificates or affidavits when in doubt about child's age.	School boards in cities or districts of 1,000 or more population.	May be established in cities or districts having 10,000 or more population. For every child committed $10 per month shall be paid the board of education out of city or county treasury, for support of the child.
Montana. Sch. Laws, 1913.	Truant officers in cities, or constable may be appointed in villages and township districts.	Vested with police powers, the authority to serve warrants and to enter places where children may be employed; take into custody anyone between 8 and 14 or between 14 and 16 unable to read and write, who is not attending school; institute proceedings against parents; keep a record of his transactions; report daily to superintendent of schools or clerk of school board.	Board of trustees.	In districts having population of 25,000 or more there shall be, and in districts having population of less than 25,000 there may be, established industrial schools for habitual truants or incorrigible children.
Nebraska. Sch. Laws, 1911.	Truant officers	Shall qualify as police officers; shall enforce the compulsory attendance law; may apprehend and take to his home or to some school any child who should be in school.	Board of education.	Boards of education in cities may establish special schools for truants and incorrigibles.
Nevada. Sch. Laws, 1911.	Attendance officer.	Duty of attendance officer, or any peace officer, or any other school officer to arrest during school hours, without warrant, any child between 8 and 16 reported absent from instruction, who shall be delivered to the teacher or parent.	Board of trustees.	Boards of trustees are authorized to establish special schools for habitual truants or for insubordinate pupils.
New Hampshire. Sch. Laws, 1911.	Truant officer	To enforce the laws relating to truants and children between 8 and 16 not attending school, and the laws prohibiting the employment of children; may visit manufacturing and	School boards.	

parental schools, penalties, etc.—Continued.

Period of commitment of child.	Paroles.	Penalties for violations.	Census.	Teachers' reports of absence.
....	....	Parent, fine not less than $50 or imprisonment not more than 30 days; any school officer, truant officer, teacher, principal, or superintendent, fine not to exceed $10 or imprisonment not over 10 days.	A complete census of all children between 6 and 16 shall be taken by the clerk of the school board or by some one appointed by the board. Copies of the census must be sent to the county superintendent, and if a city district to the city superintendent, before the first day of school.	Teachers, upon receipt of list of pupils of school age and those excused, shall report names of those not excused who are not attending school.
....	....	Parent, $10 to $25 or imprisonment 2 to 10 days, or both.	Teachers must be furnished a copy of the last enumeration list at the beginning of the term.	The secretary of board in city, town, or village schools, and clerks in other districts, shall file with county superintendent the names of parents not complying with provisions of compulsory attendance act.
....	No child shall be released upon parole in less than 4 weeks, nor until the superintendent of such industrial school is satisfied that the child will attend school regularly.	Parent, $5 to $20; any officer or principal, $25 to $50 for each offense.	District clerk shall make annually a census of all persons between 6 and 21 and a separate census of all children under 6.	Principals and teachers shall report all cases of truancy or incorrigibility as soon as possible.
....	....	Parent, $5 to $25......	In taking the annual census, enumerators shall record place and date of birth of each child enumerated, together with the school attended.	Teachers, principals, or superintendent shall report any one violating compulsory attendance act as soon as possible.
Not to exceed the remainder of the school year.	....	Parent, fine of not more than $10 or imprisonment for not more than 5 days for first offense, and $10 to $50 or imprisonment 5 to 25 days for each subsequent offense.	Board of trustees shall appoint some one to make a census of all children.	
....	....	Parent, $10 for each offense.	Truant officers or another agent are required to take a census of children between 5 and 16.	

II. *Compulsory attendance—Officers.*

States.	Officers charged with enforcement.	Powers and duties of truant officers.	By whom officers are appointed.	Truant and parental schools—Establishment.
New Hampshire (continued).		other establishments to ascertain whether children are unlawfully employed; may demand evidence of age of child.		
New Jersey...... Sch. Laws, 1911.	Truant officers; police authorities.	Board shall prescribe their duties and make rules and regulations regarding same.	Board of education; police authorities in any municipality shall, upon written request of the board of education, detail one or more members of the police force as truant officers.	Board of education of any school district may maintain a school for children between 7 and 14 who are habitual truants or who are habitually insubordinate.
New Mexico..... Sch. Laws, 1909.	County superintendent shall require directors to enforce the law.	....	....	....
New York....... Sch. Laws, 1912.	Truant officers....	May arrest without warrant any child between 7 and 16 who is a truant, and shall deliver the child to a teacher or if an habitual truant or incorrigible to a police magistrate. May enter any place of business to examine employment certificates.	School authorities in cities, etc.; in all other districts, the town board with approval of district superintendent.	School authorities of any city or school district may establish truant schools for habitual truants or disorderly children between 7 and 16; or such authorities may order such children to be committed to a private institution controlled by persons of the same religious faith as the parent.
North Carolina.. Sch. Laws, 1913.	Attendance officer.	An attendance officer shall be appointed for each township to enforce the compulsory school laws and to serve a taker of school census. He shall serve notices upon parents; may visit places of employment; may require birth certificates or affidavit stating child's age; shall keep a record of all notices served, all cases prosecuted, and make an annual report to the county board.	County board of education.	....
North Dakota... Sch. Laws, 1911.	Truant officer in cities or school districts of over 500.	Clerk or secretary of the board of education shall notify the county superintendent, who shall lay the case before the State's attorney.	Board of education in cities or districts of over 500 may employ.	....

parental schools, penalties, etc.—Continued.

Period of commitment of child.	Paroles.	Penalties for violations.	Census.	Teachers' reports of absence.
For such time as board may prescribe.	....	Parents punishable as disorderly persons.	Board of education may cause to be taken an exact census of all children between 5 and 18, not more often than once in 5 years.	
....	....	Parent, $5 to $25 or imprisonment not more than 10 days.	An enumeration of all unmarried persons between 5 and 21.	
Not to exceed 2 years.	The authorities committing any such child, and school superintendent in cities and districts having such, may parole truant.	Parent, not more than $5 or 5 days' imprisonment for first offense, and for each subsequent offense not over $50 or imprisonment not over 30 days, or both; the State commissioner of education may withhold one-half of all public moneys for nonenforcement.	In cities of the first class a permanent census board consisting of the mayor, the superintendent of schools, and police commissioner shall ascertain through the police force the residence and employment of all persons between 4 and 18; census shall be amended day by day as changes in residence occur; the school authorities in school districts shall cause a census of all children between 5 and 18.	
....	....	Parent, $5 to $25 or imprisonment not to exceed 30 days; any teacher willfully neglecting to report absences shall have $5 deducted from his salary for the current month.	The attendance officer shall take an annual census and furnish each superintendent, principal, or teacher in charge a copy of the school census.	Shall render weekly reports of absences during compulsory period to attendance officer and to county superintendent.
....	....	Parent, $5 to $20 for for first offense and $10 to $50 for each subsequent offense, with cost in each case.	The school board shall cause an enumeration of all unmarried persons between 6 and 21.	

II. *Compulsory attendance—Officers,*

States.	Officers charged with enforcement.	Powers and duties of truant officers.	By whom officers are appointed.	Truant and parental schools—Establishment.
Ohio Sess. Laws, 1913; Sch. Laws, 1912.	Truant officers	Vested with police power; may serve warrants; may enter workshops and all other places where children are employed; may take into custody any youth between 8 and 15, or between 15 and 16 if not employed and not attending school; shall institute proceedings against any officer, parent, or corporation violating compulsory attendance laws; shall keep on file names of all children between 15 and 16 to whom age and schooling certificates have been granted who desire employment; shall make daily reports to the superintendent or the clerk of the board.	Board of education.	Truants under 10 years of age may be sent to a children's home; a delinquent child under 17 may be committed, if a boy to a training school for boys, or if a girl to an industrial school for girls.
Oklahoma Sch. Laws, 1912.	Truant officers in cities, etc.	Enforcement of compulsory attendance act.	Board of education.	
Oregon Sch. Laws, 1911.	Truant officer; one appointed for districts of the second and third class for each county.	Shall notify parents, investigate all cases of truancy or nonattendance; in counties of less than 100,000 inhabitants he shall act as probation officer and see that the child-labor law is enforced.	District boundary board. In districts of the first class police authorities are required, at request of school board, to detail one or more members as truant officers, but board may appoint any citizen not a police officer.	
Pennsylvania Sch. Laws, 1911.	Attendance officers shall be elected in districts of the first, second, or third class, and may be in districts of the fourth class. Any 2 or more districts may join in the appointment of an attendance officer.	Shall have full police power; without warrant, notify parents; have power and authority to enter any place where children are employed and to inspect employment certificates.	Board of school directors.	May be established by board of school directors. Habitual truants or incorrigibles may be sent to reformatory schools or committed to the care of a probation officer by juvenile court.

parental schools, penalties, etc.—Continued.

Period of commitment of child.	Paroles.	Penalties for violations.	Census.	Teachers' reports of absence.
Discharged, on recommendation of trustees.	Judge may commit delinquent child to a probation officer, and may allow the child to remain at home, subject to the visitation officer.	Parent, $5 to $20 or imprisonment 10 to 30 days.	Census of all unmarried youth between 6 and 21 shall be taken annually, designating the number between 6 and 8, between 8 and 14, between 14 and 16, and between 16 and 21.	
....	....	Parent, $10 to $50.....	Board of education shall furnish to superintendent of all public or other schools in cities, or to the teachers in other districts, the names of all children between 8 and 16.	A report required to the board of education not less than 14 nor more than 26 weeks before close of last term of school for the year, which report shall contain the names of all children between 8 and 16 who have attended school and the period of attendance.
....	....	Parent, $5 to $25, or imprisonment not less than 2 to 10 days, or both; board, officer, principal, or teacher, $5 to $20.	Every district clerk shall enroll annually all persons over 4 and under 20. A copy of the census shall be forwarded the county superintendent.	Every month the census list and the enrollment list must be compared and absentees reported to secretary of the district boundary board, or if a district of the first class to the truant officer.
....	....	Parent, fine of not more than $2 for first offense and not more than $5 for each succeeding offense; in default, not more than 5 days in jail.	Board of school directors shall cause to be made an enumeration of all children between ages of 6 and 16, and the name of the school the child attends, and the name of the employer, if employed; census list shall be sent to county or district superintendent.	Principal or teacher shall report at once to attendance officer the names of all children who have not appeared for enrollment and from time to time all children who have been absent 3 days.

II. *Compulsory attendance—Officers,*

States.	Officers charged with enforcement.	Powers and duties of truant officers.	By whom officers are appointed.	Truant and parental schools—Establishment.
Porto Rico...... Sch. Laws, 1911.	Municipal authorities.	....	....	....
Rhode Island.... Sch. Laws, 1910.	Truant officers....	Clothed with power of special constables; may make complaint of any violation of compulsory attendance act; serve legal processes; visit places where minor children are employed; demand twice a year from all employers a report containing names of all children under 16 employed by them; may make complaint against habitual truants.	School committee.	Children convicted of truancy shall be committed to the Sockanosset School for Boys or to the Oaklawn School for Girls.
South Carolina..	None..............	No compulsory law...	....	....
South Dakota... Sch. Laws, 1911.	Truant officer in cities and independent districts; county superintendent for all other districts.	Enforce the provisions of compulsory attendance act; arrest truants and children who habitually haunt public places and have no lawful occupation.	Board of education of city or town independent districts.	Board of education may set aside a room or building for the detention and instruction of habitual truants or insubordinate children.
Tennessee....... Sch. Laws, 1911.	Truant officers may be elected in any city or town having an independent school system; clerk of board in other districts.	The secretary or clerk shall report to the board at each regular meeting all lists of absences and all excuses and shall bring suit for the board in any case in which said board may order suit to be brought.	....	The board of education in any city or town having an independent school system may establish truant schools.
Texas...........	None..............	No compulsory law...	....	....
Utah............ Sch. Laws, 1913.	Truant officer.....	Make complaints and arrest; serve legal process. County truant officer shall be made a deputy sheriff, and city truant officer shall be made a special policeman.	Board of education of county district of the first class, or board of education of any two or more such districts. City boards of education may appoint.	Board of education of any city of the first or second class, or board of education of any 2 or more such cities, or of any county district of the first class, may provide for parental school and for the support and education of the inmate thereof.
Vermont........ Sch. Laws; Sess. Laws, 1913; Sch. Laws, 1911.	Truant officers; the sheriff, deputy sheriffs, constables, and police officers shall also be truant officers ex officio.	Shall inquire into child's nonattendance, notify parents, may stop a child of school age wherever found during school hours and take him to the school he should attend; notify overseer of poor if parents can not provide necessary clothing.	Board of school directors.	Upon conviction of truancy a child may be sentenced to the Vermont Industrial School.

parental schools, penalties, etc.—Continued.

Period of commitment of child.	Paroles.	Penalties for violations.	Census.	Teachers' reports of absence.
....	....	Parent, first offense, public reprimand; second offense, not more than $5; third offense, not more than $10.	....	
Not to exceed period of minority.	Court may defer sentence and place child on probation in custody of a truant officer or probation officer.	Parent, not more than $20.	School committee or an agent shall annually take a census of all persons between 5 and 15.	
....	....	....	....	
....	....	Parent, $10 to $20; school officer or employee, $10 to $20.	The clerk of the school district board, or the board of education, shall take an annual census of all children under 21 and over 6; house to house visitation required.	
....	....	Parent, first offense, $1 for each day child is absent; fine for first offense may, upon payment of costs, be suspended until party is convicted of second offense.	Annual school census required, a copy of which shall be furnished to the person in charge of each school.	At the close of each school month each teacher or principal shall transmit to the clerk of board of education a statement of all absences of children between 8 and 14.
For a term not extending beyond the age of 14 for truants and 16 for neglected children.	May be paroled in accordance with by-law established by the board or boards of education.	Parent guilty of a misdemeanor.	Census made each year of all children 6 to 18, to include number attending public school and number attending private school. Clerk of the board of school directors shall provide the teacher of each school with list of all children required to attend such school.	
Not less than 30 weeks.	....	Parent, $5 to $25; truant officer or other officer authorised to make arrests, not more than $100.	Clerk of board shall annually make a list of all children of school age and make such report therefrom as the superintendent of education may require; shall deliver a list of such children to the teacher.	Teacher shall notify the truant officer in case a child between 8 and 15, or in case an enrolled child over 16 fails to attend.

II. *Compulsory attendance—Officers,*

States.	Officers charged with enforcement.	Powers and duties of truant officers.	By whom officers are appointed.	Truant and parental schools—Establishment.
Virginia. Sch. Laws, 1911.	Clerk of district board.	Each district board shall in February and September of each year ascertain the condition of all children between 8 and 12 years of age who are not in attendance at any public school and shall report all violations to its district clerk, who shall proceed to prosecute.		
Washington. Sch. Laws, 1909.	Attendance officer in incorporated city districts; county superintendent in other districts.	Any attendance officer may be a sheriff, constable, a city marshal, or a regularly appointed policeman. Vested with police powers, authority to make arrests and serve legal processes, to enter places in which children may be employed, to take into custody any child between 8 and 15 who may be a truant, and to conduct such child to his parents or to school; to arrest without warrant; shall keep a record of his transactions, and make reports.	Board of education for incorporated city districts.	
West Virginia. Sch. Laws, 1911.	Truant officer	If from personal knowledge or complaint the truant officer believes that any child of compulsory school age has been absent from school for 2 days, he shall immediately give written notice to the parent. If notice is not complied with he shall make complaint against such parent.	Board of education.	
Wisconsin. Sch. Laws, 1911.	Truant officers; sheriff.	In cities of the first class 10 or more truant officers shall be appointed; in all other cities having more than 2,000 population 1 or more, who shall see that the provisions of the compulsory attendance act are enforced. In all cities having less than 2,000 population and in all towns and villages the sheriff shall be truant officer.	Board of education.	
Wyoming. Sch. Laws, 1913.	Truant officer; sheriff.	Give notice to parent that attendance is required of such parent's child; make and file complaints against parents.	District board in a city or town of more than 2,500 inhabitants may appoint.	

parental schools, penalties, etc.—Continued.

Period of commitment of child.	Paroles.	Penalties for violations.	Census.	Teachers' reports of absence.
....	....	Parent, $2 to $10 for the first offense and $5 to $20 for each subsequent offense; clerk of district board, $5 to $10.	Clerk of each district board shall take a census of all persons between 7 and 21 every five years.	
....	....	Parent, not more than $25.	The district clerk or secretary shall provide the teacher with a copy of the last census of school children; census of all persons between 5 and 21 shall be taken by the secretary or by enumerators appointed by him.	Every teacher shall report to the truant officer, principal, or superintendent all cases of truancy or incorrigibility.
....	....	Parent, $2 for the first offense, $5 for each subsequent offense.	Enumeration to be taken and reported in separate classes; all youth between 6 and 16, all between 16 and 21, and all between 8 and 15, and, in districts containing kindergartens, all between 4 and 6.	Teachers in ungraded schools and principals and superintendents in graded and high schools shall report to truant officers all cases of violation and shall furnish information and reports for a hearing.
....	....	Parent, $5 to $50, with costs, or imprisonment in the county jail not exceeding 3 months, or both; any official or teacher, $5 to $25.	Census of all children over 4 and under 20, one copy to be delivered to head teacher.	Teachers shall report attendance and enrollment.
....	....	Parent, $5 to $25 or imprisonment for not more than 90 days.	Clerk of each school district to furnish the sheriff or constable a list of names of children of compulsory school age.	At the close of the first week of school each teacher shall forward a list of pupils attending to the proper officials. When pupil has been absent 3 days without valid excuse, or is habitually absent or tardy, teacher shall make written report to the truant officer.

III. CHILD LABOR.—*Employments prohibited,*

States.	Employments prohibited.	Hours of labor.	Certificate required for employment.
Alabama......... Sch. Laws, 1911.	Under 12: In any mill, factory, or manufacturing establishment. Between 12 and 16: Unless such child shall attend school 8 weeks in every year of employment, 6 of which shall be consecutive.	Under 14: Not more than 60 hours a week; between 16 and 18, not more than 8 hours a night; under 16, not between 7 p. m. to 7 a. m.	Under 18: Affidavit from parent stating date and place of birth of child.
Arizona.......... Sch. Laws, 1912.	Under 14: In any mill, factory, workshop, mercantile establishment, tenement house, store, business office, telegraph or telephone office, restaurant, bakery, barber shop, apartment house, bootblack stand or parlor, or in the distribution or transportation of merchandise or messages, or in any business whatsoever during school hours. Under 16: Sewing machine belts; adjusting belts; oiling, wiping, or cleaning machinery; operating circular or hand saws; and other dangerous machinery: the preparing of any composition in which dangerous or poisonous acids are used, etc. Under 18: Extra hazardous occupations.	Boys under 16 and girls under 18: Not more than 48 hours a week, nor more than 8 hours a day, nor before 7 a. m. or after 7 p. m.	Under 16: Age and schooling, showing that the child is 14.
Arkansas......... Sch. Laws, 1910; Kirby's Digest, 1904.	Between 8 and 14: In any mine, factory, workshop, mercantile, or in any manner during school hours.	Under 14: Between 7 p. m. and 6 a. m. or for more than 60 hours a week or more than 10 hours a day.	Affidavit of parent, certifying age and date of birth, filed with employer. Under 14: A certificate of school attendance.
California .... Sch. Laws, 1911.	Under 15: In any mercantile institution, office, laundry, manufacturing establishment, workshop, place of amusement, restaurant, hotel, apartment house, or in the distribution or transmission of merchandise or messages. A permit may be granted a child over 12 years of age to work upon the sworn statement of his parents that they (parents) are incapacitated for labor through illness.	Under 18: Not more than 9 hours a day, nor between 10 p. m. and 5 a. m.	Between 15 and 16: Age and schooling certificate filed with employer.
Colorado .... Sch. Laws, 1912.	Under 14: At any gainful occupation in any theater, concert hall, or place of amusement where intoxicating liquors are sold, or in any mercantile institution, store, office, hotel, laundry, manufacturing establishment, bowling alley, elevator, factory, or workshop, or as messenger or driver thereof; nor at any gainful work when the public schools are in session. Under 16: To be exhibited, used, or employed as an actor or performer in any concert hall or room where intoxicating liquors are sold or given away; or in any variety theater, or for any business or vocation injurious to the morals or dangerous to the life or limb of the child, such as mining, adjusting belts to machinery, operating planers, etc.	Under 14: Before 7 a. m., or after 8 p. m.; not more than 8 hours a day for any one under 16.	Between 14 and 16: Age and school certificate.

hours of labor, certificates, penalties, etc.

By whom certificate is issued or approved.	Proof of age required for certificate.	Minimum educational qualifications required for certificate.	Physical examination for certificate.	"Vacation certificate."	Law enforced by whom.	Penalty for violation.
Parent; filed with employer, probate judge, or State inspector.	Affidavit of parent.	....	....	....	State prison inspector.	Employer, fine not less than $50 nor more than $100.
Superintendent of city, county, or town schools.	School record, passport, birth certificate, baptismal certificate, affidavit of parent.	Read and write legibly, simple sentences in the English language, and instruction equivalent to 5 yearly grades in the common school branches.	....	....	Factory and other duly authorized inspectors, and school attendance officers.	Employees or parent, fine of $5 to $200 or imprisonment 10 to 30 days.
....	....	Read or write his or her name and simple sentences in English.	....	....	....	Any violator, fine of $5 to $10.
Superintendent of schools of the city or by a person authorized by the local school trustee.	School census, certificate of birth or baptism, public register of birth, or some other manner.	Read English at sight, write legibly and correctly simple English sentence, unless a regular atattendant for the then current term at a regularly conducted night school.	....	Over 12: Permit signed by the principal, vice principal, or secretary of the school board.	Commissioner of the bureau of labor statistics, school district authorities.	Every person authorized to sign employment certificate, $5 to $50 or imprisonment for not more than 30 days, or both; employer, $50 to $200, or imprisonment for not more than 60 days, or both.
Superintendent of schools, or if there is no superintendent, by some one authorized by the school board.	Last school census, certificate of birth or baptism, register of birth with town clerk records of the public or parochial schools; affidavit.	Read at sight and write legibly simple sentences, unless a regular attendant at an evening school.	....	....	State factory inspector; truant officers.	Parent or guardian, $5 to $25; persons authorized to sign the employment certificate, $5 to $100; employer, $5 to $100; second violation by anyone, $100 to $500, or imprisonment not to exceed 90 days, or both.

III. CHILD LABOR.—*Employments prohibited, hours*

States.	Employments prohibited.	Hours of labor.	Certificate required for employment.
Connecticut...... Sch. Laws, 1912.	Under 14: In any mechanical, mercantile, or manufacturing establishment; under 16, all dangerous machinery, dangerous or poisoneous acids, explosives, etc.; under 18, as operator of elevator running at a speed of over 200 feet a minute.	Under 16: Not more than 58 hours in any calendar week.	Between 14 and 16: An age and school certificate filed with employer.
Delaware.......... Sess. Laws, 1913.	Under 12: In any cannery or packing establishment other than those engaged in canning or packing fruits and vegetables. Under 14: In any mill, factory, workshop, merchantile or mechanical establishment, tenement house, manufactory or workshop, office, office building, restaurant, boarding house, bakery, barber shop, hotel, bootblack stand, public stable, garage, laundry, or as a driver, or in any brick or lumber yard, or in the construction and repair of buildings, or in the transmission of messages, or with dangerous machinery, or in any occupation when the public schools are in session. Under 15: In occupations dangerous to the life or limb or injurious to the health or morals.	Under 16: Not more than 6 days a week nor more than 54 hours a week, nor before 7 a. m., or after 6 p. m.	Under 16: A certificate of age and schooling filed with employer; on termination of employment certificate to be returned to the official issuing it.
Dist. Columbia... Statutes, 1911.	Under 14: In any factory, workshop, merchantile establishment, store, business office, telegraph or telephone office, restaurant, hotel, apartment house, club, theater, bowling alley, laundry, bootblack stand, or in the distribution or transmission of merchandise or messages, or at any work for wages during the hours the public schools are in session; judge of juvenile court may permit a child between 12 and 14 to work if parents actually need the support of the child.	Under 14: not before 6 a. m., nor after 7 p. m.; not more than 8 hours a day, nor more than 48 hours a week.	Under 16: Age and schooling certificate filed with employer; permit to sell papers in public places required.
Florida........... Statutes, 1906.	Under 14: In occupations dangerous to life or limb or injurious to the health or morals. Under 15: Except with consent of those having lawful control, for more than 60 days.	Not over 10 hours a day.....	....
Georgia.......... Sch. Laws, 1911.	Under 10: In any factory or manufacturing establishment. Under 12: Unless parents are dependent upon child for support. Under 14: Except as above, unless child has certain educational qualifications.	Under 14: Not in any factory between 7 p. m. and 6 a. m.	Affidavit from parent certifying to the age of the child and attendance at school filed with employer.
Idaho............ Sch. Laws, 1911.	Under 14: In any mine, factory, workshop, merchantile establishment, store, telegraph or telephone office, laundry, restaurant, hotel, apartment house, or in the distribution or transmission of merchandise or messages, nor in any such business	Under 16: Not before 6 a. m., nor after 9 p. m., nor more than 54 hours a week, nor more than 9 hours a day.	Between 14 and 16: Employer shall keep a record of the names, ages, and place of residence.

of labor, certificates, penalties, etc.—Continued.

By whom certificate is issued or approved.	Proof of age required for certificate.	Minimum educational qualifications required for certificate.	Physical examination for certificate.	"Vacation certificate."	Law enforced by whom.	Penalty for violation.
Secretary of State board of education, or a school superintendent, etc.	The person issuing the certificate may require an affidavit from the parent.	To read with facility, to write legibly simple sentences, to perform the operations, of the fundamental rules of arithmetic.	School authorities may cause any child to be examined by a reputable physician.	....	State factory inspector; State board of education, school visitors, school boards.	Every person employing or permitting the employment not more than $100.
Superintendent of city of Wilmington or by superintendents of the counties or some one authorized by them.	Birth certificate, passport, baptismal certificate, school census, affidavit.	Read intelligently and write legibly simple sentences in the English language.	....	Vacation certificates permit the child to work the entire year, excepting when required to attend school.	Factory inspector.	Anyone employing ' or permitting a child to work $5 to $50 for first offense; $50 to $200 or imprisonment for not more than 30 days for second offense; for third offense, not less than $200, or imprisonment for not more than 60 days, or both. Any person authorized to issue employment certificates, $5 to $100.
Superintendent of public schools or one authorized by him.	Certificate of birth or baptism or other religious record, register of birth, or affidavit of parent.	Read at sight and write legibly simple sentences in the English language; must have attended school at least 130 days during the school year previous to applying for such school record.	The person issuing the certificate must certify that the child is physically able to perform the work he or she intends to do.	....	Inspectors and truant officers.	Whoever employs or permits a child to be employed, not more than $50; every person authorized to sign the certificate, not more than $50.
....	....	....	....	....	....	Employer, not over $20 or imprisonment not over 60 days.
....	....	Write his or her name and simple sentences, and shall have attended school for 12 weeks of the preceding year, 6 weeks of which must have been consecutive.	....	....	....	Employer or parent; prescribed in section 1039 of the Penal Code of Georgia, 1895.
....	....	Read at sight and write legibly simple sentences in the English language, and has received	....	....	Probation officers or school trustees.	Employer and parent, not more than $50; for theatrical employment $50 to $200 or imprisonment

III. CHILD LABOR.—*Employments prohibited, hours*

States.	Employments prohibited.	Hours of labor.	Certificate required for employment.
Kansas.......... Sch. Laws, 1911.	Under 14: In any factory, workshop not owned or operated by the child's parent, any theater, or packing house, or operating elevators, or in or about any mine or in any business or service whatever during public-school hours. Under 16: In any occupation or at any place dangerous or injurious to life, limb, health, or morals.	Under 16: Not more than 8 hours a day nor more than 48 hours in a week, nor before 7 a. m. or after 6 p. m.	Under 16: Employers shall obtain an age certificate.
Kentucky........ Sch. Laws, 1912.	Under 14: In any factory, workshop, mine, mercantile establishment, store, business office, telegraph office, restaurant, hotel, apartment house, or in the distribution or transmission of merchandise or messages, or in any business or service whatever during public-school hours. Under 16: In any occupation dangerous or injurious to limb, health, or morals.	Under 16: Not more than 60 hours a week nor more than 10 hours a day, nor before 7 a. m. or after 7 p. m.	Employer must keep on file an employment certificate of children between 14 and 16.
Louisiana........ Sess. Laws, 1906.	Boys under 12 and girls under 14: In any factory, mill, warehouse, workshop, or manufacturing establishment.	Under 18: Not more than 10 hours a day nor more than 60 hours a week, 1 hour a day being allowed for dinner.	....
Maine............ Sch. Laws, 1913.	Under 14: In any manufacturing or mechanical establishment, telephone or telegraph office, or in the delivery and transmission of telephone or telegraph messages.	Females under 18 or males under 16: Not more than 10 hours in a day nor more than 58 hours in a week.	Between 14 and 16: An age and schooling certificate.
Maryland........ Sess. Laws, 1912.	Under 12: In any cannery or packing establishment, store, office, boarding house, place of amusement, club, or in the distribution, transmission, or sale of merchandise. Under 14: In any mill, factory, mechanical establishment, tenement house, manufactory or workshop, office building, restaurant, bakery, barber shop, hotel, apartment house, bootblack establishment, public stable, garage, laundry, or as a driver, or in any brick or lumber yard, or in the construction and repair of buildings, or as a messenger for telegraph, telephone, or message companies. Under 16: In connection with dangerous machinery or in any occupation dangerous to life or limb or injurious to the health or morals. Under 18: In blast furnaces docks or wharves, electric wires, elevators, hoisting machines or dynamos, cleaning machinery, switch tending, motormen, etc.	....	Under 16: Employment certificate.

of labor, *certificates*, *penalties*, *etc.*—Continued.

By whom certificate is issued or approved.	Proof of age required for certificate.	Minimum educational qualifications required for certificate.	Physical examination for certificate.	"Vacation certificate."	Law enforced by whom.	Penalty for violation.
School officials certify to census record.	School census; affidavit of parent to employer.	....	....	....	State factory inspector, State inspector of mines.	Employer, $25 to $100 or imprisonment 30 to 90 days.
Superintendent of schools or, if none, by the county superintendent of schools.	School record, passport, certificate of birth or baptism, record of birth, affidavit of parent.	Read and write simple sentences in the English language.	....	....	Labor inspector.	Parent or employer, not more than $50. For every day such employment continues after notice, $5 to $20.
....	....	....	....	....	Factory inspector.	Employer, $10 to $25 or imprisonment for not more than 30 days, or both.
Superintendent of schools.	Town clerk's record, certificate of baptism, passport, or other document satisfactory to the superintendent.	Read at sight and write simple sentences in the English language, and perform simple arithmetical problems involving the fundamental processes.	Persons issuing certificate may require a health certificate.	....	Commissioner of labor.	Employer or parent, $1 to $50. Those authorized to sign age and schooling certificate, $25 to $50.
In Baltimore by the chief of the Maryland Bureau of Statistics. In the counties by the county superintendent of schools.	Birth certificate, passport, school census affidavit of parent.	Read intelligently and legibly simple sentences in the English language and has completed a course of study equivalent to five yearly grades in reading, spelling, writing, English language and geography, and is familiar with the fundamental operation of arithmetic up to and including fractions.	Certificate signed by a physician that child is physically able to do the work applied for.	Vacation certificate entitles child of 12 to work except when school is in session.	Factory inspectors, attendance officers.	Employer or parent, not more than $50 for first offense, and not more than $200 or imprisonment for not more than 30 days for second offense. Those issuing certificates not more than $100.

III. CHILD LABOR.—*Employments prohibited, hours*

States.	Employments prohibited.	Hours of labor.	Certificate required for employment.
Massachusetts.... Sch. Laws, 1911.	Under 14: In any factory, workshop, or mercantile establishment, or in any work while the public schools are in session. Minors to whom this law applies may work on Saturdays between 6 a. m. and 7 p. m.	Under 14: Not before 6 a. m. nor after 7 p. m.	Under 16: Age and schooling certificate.
Michigan......... Sess. Laws, 1911.	Under 14: In any mercantile institution, store, office, hotel, laundry, manufacturing establishment, mine, bowling alley, theater, passenger or freight elevator, factory or workshop, telegraph or messenger service. Under 16: In any theater, variety show, moving-picture show, burlesque show, or other kind of playhouse, music or dance hall, pool room or billiard room; may be employed by traveling theatrical companies for acting a part. Females under 21 and males under 18: In any employment or where their health may be injured or morals depraved. Under 21: In any theater, concert hall, or place of amusement where intoxicating liquors are sold.	Males under 18: Not more than an average of 9 hours a day or 54 hours a week, nor more than 10 hours a day. Under 16: Not between 6 p. m. and 6 a. m.	Under 16: Permit.
Minnesota........ Sch. Laws, 1911; Sess. Laws, 1913.	Under 14: In any factory, mill, or workshop, in any mine, in the construction of any building, or about any engineering work, or in any employment during the school term except for theatrical exhibitions or concerts on consent of mayor or president of the council. Under 16: In any employment dangerous to the life, health, or morals of such children.	Under 16: Not more than 60 hours in a week nor more than 10 hours in a day, or before 7 a. m. or after 7 p. m.	Between 14 and 16: Age and schooling certificate.

of labor, certificates, penalties, etc.—Continued.

By whom certificate is issued or approved.	Proof of age required for certificate.	Minimum educational qualifications required for certificate.	Physical examination for certificate.	"Vacation certificate."	Law enforced by whom.	Penalty for violation.
Superintendent of schools.	Certificate of birth or baptism, town clerk's register, other evidence under oath.	Read at sight and write legibly simple sentences in the English language.	Person issuing certificate must have a certificate from a physician, or a written record in the schools made within a year regarding child's health.	....	Inspector of factories and truant officers.	Employer or parent, not more than $300 or imprisonment for not more than 6 months or both. For every day after notice has been served, $20 to $100, or imprisonment for not more than 6 months. For forging a certificate, $100 to $500 or imprisonment for not less than 3 months nor more than 1 year, or both fine and imprisonment.
Superintendent of schools or county commissioner of schools.	Passport, record of birth or baptism or other religious record. If none of these can be produced, a statement from a physician of the board of health certifying the age of the child.	Attendance 100 days during year previous to arriving at 14 or during year previous to applying for certificate; read intelligently and write legibly; satisfactory completion of fourth grade.	Physician officially connected with the board of health in doubtful cases.	Limited vacation permits granted. Child to report once a month to person who issued permit.	Factory inspectors.	Any violator, $10 to $100 or imprisonment 10 to 90 days.
Superintendent of schools or, if none, by chairman of school board.	School record, birth certificate or affidavit of parent.	Read and write simple sentences in English; instruction in reading, spelling, writing, English grammar, and geography, and familiarity with the fundamental operation in arithmetic, including fractions.	In doubtful cases of physical fitness the medical officer of the board of health.	....	Commissioner of labor.	Employer or parent, not more than $50; for every day after being notified, $5 to $25.

III. CHILD LABOR.—*Employments prohibited, hours*

States.	Employments prohibited.	Hours of labor.	Certificate required for employment.
Mississippi. Sess. Laws, 1912.	Boys under 12 or girls under 14: In any mill, factory, manufacturing establishment or cannery. Under 16: In any occupation without consent of parent.	Boys under 16 or girls under 18: Not more than 8 hours in a day or more than 48 hours in a week, or between 7 p. m. and 6 a. m.	Affidavit of parent to employer that child is 16.
Missouri. Sch. Laws, 1911.	Boys under 10 and girls under 16: Selling newspapers, etc. Under 14: In any gainful occupation, except at agricultural pursuits and in domestic service. Under 16: In any employment dangerous to life and limb or injurious to the health or morals.	Under 16: Not more than 48 hours in a week nor more than 8 hours a day, nor between 7 p. m. and 7 a. m.	Under 16: Age and schooling certificate.
Montana. Sch. Laws, 1913.	Under 14: In any employment while the public schools are in session.	....	do
Nebraska. Sess. Laws, 1907.	Under 14: In any theater, concert hall, or place of amusement, or any place where intoxicating liquors are sold, or in any mercantile institution, store, office, hotel, laundry, manufacturing establishment, bowling alley, passenger or freight elevator, factory or workshop, or as a messenger or driver thereof, or in any business or service when the public schools are in session. Under 16: In any work dangerous to the life or limb, or in which the child's health or morals may be injured.	Under 17: Not more than 48 hours a week nor more than 8 hours a day, nor before 6 a. m. or after 8 p. m.	Under 16: Age and schooling.
Nevada. Rev. Laws, 1912, 6823–4.	Males under 14 and females under 16: In any store, shop, factory, mine, or any inside employment not connected with farm or house work. Under 18: In any mendicant occupation, indecent or immoral exhibition or practice; any practice or exhibition dangerous or injurious to life, limb, health, or morals, as messenger for delivering communications or merchandise to any house of prostitution, etc.	....	Males under 14 and females under 16: Written permit.
New Hampshire. Sess. Laws, 1911: Sess. Laws, 1913.	Under 14: In any mill, factory, workshop, quarry, mercantile establishment, tenement house, manufactory or workshop, store, business office, telegraph or telephone office, restaurant, bakery, hotel, barber shop, apartment house, bootblack stand or parlor, or in the distribution or transmission of merchandise or messages.	Boys under 16 and girls under 18, in other than domestic service or work on the farm: Not more than 58 hours a week nor more 11 hours a day, nor between 7 p. m. and 6 a. m.	Under 16: Age and schooling.

of labor, certificates, penalties, etc.—Continued.

By whom certificate is issued or approved.	Proof of age required for certificate.	Minimum educational qualifications required for certificate.	Physical examination for certificate.	"Vacation certificate."	Law enforced by whom.	Penalty for violation.
....	....	....	....	....	Sheriff of county; county health officers.	Employer or parent, $50 to $100 or imprisonment 10 to 60 days, or both. Failure of employer to give information, $10 to $100.
Superintendent of schools or, if none, by some one authorized by the board.	School record, passport, certificate of birth or baptism, affidavit of parent.	Read and write legibly simple sentences in the English language.	Persons issuing certificate may request a medical officer of the board of health or a licensed physician to determine physical fitness.	....	Factory inspector.	Violation of any provisions, fine of not more than $100 or by imprisonment not exceeding one year, or both.
Superintendent of schools; in other districts clerk of board of trustees.	Some satisfactory proof.	Read intelligently and write legibly the English language.	....	....	Truant officers.	Any violator, $25 to $50.
Superintendent of schools or, if none, by some one authorized by the school district officers.	School record, passport, certificate of birth or baptism or other religious or official record, affidavit of parent.	Read and write legibly simple sentences in English.	In doubtful cases of physical fitness, a medical officer of the board of health, or a physician approved by the State board of inspectors.	....	Deputy commissioner of labor, truant officer, and county attorney.	Employer and parent, not more than $50 for first offense; for every day employed after notice has been served, $5 to $20; persons authorized to sign certificates, not more than $50.
Judge of county district court.	....	....	....	....	....	Employer or parent guilty of misdemeanor.
Superintendent of schools or, if none, by a person authorized by school board.	School record, passport, certificate of birth or baptism, or public record.	Completed course of study presented for the elementary schools.	Certificate from a medical officer of the board of health, or a physician designated by school board.	....	Truant officers; State factory inspector.	Employer or parent, $5 to $200 or imprisonment 10 to 30 days, or both; for every day, after notice $5 to $20; persons authorized to sign certificates, $5 to $200 or imprisonment; superintendents of schools, $5 to $25.

III. CHILD LABOR.—*Employments prohibited, hours*

States.	Employments prohibited.	Hours of labor.	Certificate required for employment.
New Jersey. Sess. Laws, 1904, 1911, 1913.	Under 14: In any factory, workshop, mill or place where manufacture is carried on; or in any mercantile establishment during school hours. Under 21, in any first-class city or under 18 in other municipalities: As messenger for any telegraph, telephone, or messenger corporation, etc., before 5 a. m. or after 10 p. m.	Under 16, in any factory workshop, or mill: Not more than 10 hours a day or 55 hours a week, or before 6 a. m. or after 6 p. m.; in any mercantile establishment not more than 58 hours a week or between 7 p. m. and 7 a. m.	Under 16: Age and schooling.
New Mexico.	....	....	....
New York. Sch. Laws, 1912.	Boys under 10 and girls under 16: Selling newspapers, magazines, or periodicals in any public place. Under 14: In any factory, in any business or service whatever during public-shool hours. Under 16: In any mercantile establishment, business office, telegraph office, restaurant, hotel, apartment house, theater or other place of amusement, bowling alley, barber shop, shoe-polishing establishment, or in the distribution or transmission of merchandise or messages.	Under 16: Not more than 6 days or 54 hours a week nor more than 9 hours a day, nor between 10 p. m. and 7 a. m. In cities of the first class, not after 7 p. m.	Under 16: Age and schooling.
North Carolina. Sch. Laws, 1913.	Under 12: In any factory or manufacturing establishment. Between 12 and 13: In any factory except as an apprentice, and then only after having attended school 4 months in preceding 12.	Under 16: Not between 9 p. m. and 6 a. m.	Under 16: Certificate of age and schooling.
North Dakota. Sch. Laws, 1911.	Under 14: In any mine, factory, workshop, mercantile establishment, store, business office, telegraph office, restaurant, hotel, apartment house, or in the distribution or transmission of merchandise or messages, or in any business whatever during the hours the public schools are in session. Under 16: In any employments dangerous to life or limb or where health may be injured or morals depraved.	Under 16: Not more than 48 hours in a week, nor more than 8 hours in a day, nor before 7 a. m. or after 7 p. m.	Between 14 and 16: Age and schooling.
Ohio. Sess. Laws, 1913.	Under 15: In any business whatever during public school hours. Males under 15 and females under 16: In any mill, factory, workshop, mercantile or mechanical establishment, tenement house, manufactory or workshops, store, office, office building, restaurant, boarding house, bakery, barber shop, hotel, apartment house, bootblack establishment, public stable, garage, laundry, place of	Boys under 16 and girls under 18: Not more than 6 days a week, nor more than 48 hours a week, nor more than 8 hours a day, nor between 6 p. m. and 7 a. m. Boys under 18 and girls under 21: Not more than 6 days a week, nor more than 54 hours a week, or between 10 p. m. and 6 a. m.	Boys under 16 and girls under 18: Age and schooling.

of labor, certificates, penalties, etc.—Continued.

By whom certificate is issued or approved.	Proof of age required for certificate.	Minimum educational qualifications required for certificate.	Physical examination for certificate.	"Vacation certificate."	Law enforced by whom.	Penalty for violation.
Superintendent or supervising principal.	Transcript, passport, such other satisfactory documentary evidence or certificate from two physicians that child is 14.	Attended school at least 130 days the twelve months preceding application; read intelligently and write legibly simple sentences in English; completion of fifth grade.	Certificate from medical inspector that child is physically able to work.	....	Commissioner of labor; any inspector or truant officer.	Employer and parent, $50.
Commissioner of health or person authorized by him.	Birth certificate, passport, or baptismal certificate, or affidavit if no other evidence is accessible, or physician's certificate in cities of the first class.	Attended school not less than 130 days during the twelve months preceding the 14th birthday or during the 12 months next preceding application; read and write simple sentences in English and completion of first six grades.	....	....	Factory inspector.	For violating child-labor law, first offense, $20 to $50; for each subsequent offense, $50 to $200.
A certificate from parent giving name and age of child and, if under 13 and more than 12, stating that child has attended 4 months in preceding 12.	....	School attendance 4 months in the preceding 12.	....	....	County superintendent shall investigate and report to the solicitor of the judicial district.	Employer or parent, guilty of a misdemeanor.
Superintendent of schools; if none, clerk of school board.	School record, passport, certificate of birth or baptism or other religious record, public record, affidavit of parent.	Read and legibly write simple sentences in English.	In doubtful cases of physical fitness by a medical officer of board of health.	....	School board	Any violator, $20 to $50.
Superintendent of schools; if none, clerk of the board of education.	Passport, certificate of birth or baptism or other religious record, public register, school census. If none of the above, a certifi-	Sixth grade test if a male and seventh grade test if a female.	A certificate of the school physician or of the board of health.	May be granted boys under 16 and girls under 18.	Factory inspectors, truant officers, and others.	Employer or parent, $5 to $50; for a second offense, $50 to $200, or by imprisonment for not more than 30 days, or both; for a third offense, not less than $200 or im-

III. CHILD LABOR.—*Employments prohibited, hours*

States.	Employments prohibited.	Hours of labor.	Certificate required for employment.
Ohio (contd).	amusement, club, or as a driver, or in any brick or lumber yard, or in the construction or repair of buildings, or in the distribution, transmission, or sale of merchandise. Boys under 15 or females under 21: In the transmission of messages. Under 16: In any occupation dangerous to life and limb, or injurious to the health or morals. Under 18: In blast furnaces, dynamos, as telegraph operators, etc.		
Oklahoma....... Sess. Laws, 1909.	Under 14: In any factory, workshop, theater, bowling alley, pool hall, steam laundry, or in any occupation injurious to health or morals or hazardous to life and limb. Under 16: In any especially hazardous occupation.	Under 16: Not more than 8 hours a day, except for agricultural or domestic service. Boys under 16 or girls under 18: Between 6 p. m. and 7 a. m.	Under 16: Age and schooling.
Oregon........... Sess. Laws, 1905.	Under 14: In any factory, store, workshop, mine, the telegraph, telephone, or public messenger service, or in any business during school hours.	Under 16: Not more than 10 hours a day, nor more than 6 days a week, nor between 6 p. m. and 7 a. m.	.....do............
Pennsylvania.... Sess. Laws, 1909.	Under 14: In mercantile establishments, stores; telegraph, telephone, or other business offices; hotels, restaurants, or in any factory, workshop, rolling mills, bituminous or anthracite coal mines. Under 16: In mercantile establishments, telegraph, telephone, or other business offices, hotels, restaurants, factories, workshops, rolling mills, or hazardous occupations. Under 18: In especially hazardous occupations.	Males under 16 and females under 18: Not more than 10 hours a day (except to make a shorter workday for one day in the week), nor more than 58 hours a week, nor between 9 p. m. and 6 a. m.	Between 14 and 16: Age and schooling.

of labor, certificates, penalties, etc.—Continued.

By whom certificate is issued or approved.	Proof of age required for certificate.	Minimum educational qualifications required for certificate.	Physical examination for certificate.	"Vacation certificate."	Law enforced by whom.	Penalty for violation.
	cate from the school physician.					prisonment not more than 60 days, or both. For every day after notice an employer, $5 to $20. Persons signing any certificate, $25 to $100.
County superintendent.	Last school census, certificate of birth, or the register of city or county, or an affidavit by a physician, or school record, or an affidavit by parent if the child appears to be of proper age.	Read and write simple sentences in English.	In doubtful cases by medical officer of the board of health.	....	Commissioner of labor.	Any violator, $10 to $50 or imprisonment 10 to 30 days, or both.
Superintendent of schools or, if none, some one authorized by the board of school directors.	Last school census, certificate of birth, or baptism, or other religious record or public register.	Read at sight and write legibly simple sentences in English; school attendance 160 days during the school year previous to arriving at 14 or during the year previous to applying for a school record; instruction in reading, spelling, writing, English grammar, geography, and familiarity with the fundamental operations in arithmetic, including fractions.	....	....	Board of inspectors of child labor.	Employer, $10 to $25 for first offense; $25 to $50 for second offense; for third offense, imprisonment 10 to 30 days. Parent, $5 to $25.
Superintendent, or, if none, principal, or secretary of the school board.	Birth certificate or baptismal certificate, passport, or other religious record, school record, affidavit of parent.	Read and write the English language intelligently.	....	....	Chief factory inspector.	Any violator, $10 to $25 or 10 days imprisonment, or both.

III. CHILD LABOR.—*Employments prohibited, hours*

States.	Employments prohibited.	Hours of labor.	Certificate required for employment.
Porto Rico. Sess. Laws, 1913.	Under 14: In any lucrative occupation during school hours, unless child has done the work for admission to the fourth grade of the public rural schools, or has passed the eighth grade of the public graded schools. Boys under 12 and girls under 14: Selling newspapers, candies, or other merchandise in any of the streets or public squares nor working as bootblacks in said places during public-school hours.	Under 16: Not more than 6 hours a day, nor more than 36 hours a week in any establishment, nor more than 8 hours a day, nor more than 48 hours a week in any agricultural estate, nor in any lucrative occupation between 6 p. m. and 6 a. m.	Under 18: Age and schooling.
Rhode Island. Sess. Laws, 1910; Sess. Laws, 1913.	Under 14: In any factory, manufacturing or business establishment. Under 16: Cleaning machinery while in motion.	Under 16: Between 8 p. m. and 6 a. m. except Saturdays and the four days immediately preceding Christmas.	Under 16: Age and schooling.
South Carolina. Sess. Laws, 1911.	Under 12: In any mine, factory, or textile establishment.	Under 16: Between 8 p. m. and 6 a. m., unless to make up lost time, but not later than 9 p. m.	Sworn statement from parent to employer regarding child's age, if under 14.
South Dakota. Sess. Laws, 1913.	Under 14: In any factory or workshop, mine, or any mercantile establishment excepting during vacation of public school. Under 16: Any occupation dangerous to life, health, or morals.	Under 16: Not more than 10 hours a day or 60 hours a week; but on Saturday and for 10 days prior to Christmas child may work until 10 p. m.	Under 14: Age and schooling.
Tennessee. Sess. Laws, 1911; Sess. Laws, 1913.	Under 14: In any mill, factory, workshop, laundry, telegraph, or telephone office, or in the distribution or transmission of merchandise or messages. Under 16: Occupations dangerous to life or limb. Under 18: Messenger for a telegraph or messenger company or deliver goods before 5 a. m. and after 10 p. m.	....	Sworn statement by parent giving place and date of birth of child.
Texas. Sess. Laws, 1913.	Under 15: In any manufacturing or other establishment using dangerous machinery, any distillery, brewery, or in the manufacture of goods for immoral purposes, or where the child's health may be impaired or morals debased. Under 17: In any quarry or mine.	....	....

of labor, certificates, penalties, etc.—Continued.

By whom certificate is issued or approved.	Proof of age required for certificate.	Minimum educational qualifications required for certificate.	Physical examination for certificate.	"Vacation certificate."	Law enforced by whom.	Penalty for violation.
The alcalde of the municipality.	Public register, baptismal certificate, affidavit of parent. If none of these, affidavit of two honorable persons of the locality.	Prepared for admission to fourth grade of public rural schools or passed eighth grade of public graded schools.	....	....	Bureau of labor.	Employer, $25 to $100; for violations after first, $100 to $1,000.
School committee or some person appointed by the committee.	Birth certificate baptismal certificate, passport, or other satisfactory evidence.	Read at sight and write legibly simple sentences in English.	Physical examination by a licensed physician.	....	Factory inspector.	Any violator, not more than $500.
....	....	....	....	....	Commissioner of agriculture, commerce, and industries.	Employer or parent, $10 to $50 or imprisonment for not more than 30 days.
County superintendent.	....	Read and write simple sentences in English, or a regular attendant at some school, or during the past 12 months has attended school as required by law. If between 14 and 16 and unable to read and write, child must attend school as provided for children between 8 and 14.	....	....	Places of employment subject to visitation by the county superintendent.	Any violator, $10 to $100 or imprisonment for not more than 30 days, or both.
....	....	....	....	....	....	Employer or parent, not more than $25.
....	....	....	....	....	....	Employer, $50 to $200; each day constitutes a separate offense.

III. CHILD LABOR.—*Employments prohibited, hours*

States.	Employments prohibited.	Hours of labor.	Certificate required for employment.
Utah Sess. Laws, 1911.	Under 14: In manufacture of paints, colors, or white lead; manufacturing, packing, or storing of powder, dynamite, nitroglycerin compounds, fuses, or other explosives; manufacture of goods for immoral purposes; nor in any quarry, any mine, coal breaker, laundry, tobacco warehouse, cigar factory, or other factory where tobacco is manufactured or prepared; distillery, brewery, or any other establishment where malt or alcoholic liquors are manufactured, packed, wrapped, or bottled; theater, concert hall, saloon, or in operating any automobile, motor car, or truck; or the running or management of elevators, lifts, or hoisting machines; or in bowling alleys; or in any other employment declared by the State board of health to be dangerous to lives or limbs, or injurious to the health or morals of children under 14.	Boys under 14 and girls under 16: Not more than 54 hours a week, except domestic service, fruit or vegetable packing, or farm work. Under 21: In cities of first or second class as messengers between 9 p. m. and 5 a. m.	Age and schooling, if 14.
Vermont Sch. Laws, 1911; Sess. Laws, 1912.	Under 12: In any mill, factory, quarry, workshop, or in delivering messages. Under 14: In any mill, factory, quarry, or workshop wherein more than 10 persons are employed. Under 16: All employments dangerous to life or limb and injurious to health. In railroading, mining, manufacturing, or quarrying, or in a hotel, bowling alley, or in delivering messages, except during vacation and after school, unless elementary school course has been completed.	Under 16: Not more than 9 hours a day, nor more than 50 hours a week, nor between 8 p. m. and 7 a. m.	Under 16: Age and schooling.
Virginia Code of 1910; Sess. Laws, 1912.	Under 14: In any factory, workshop, mercantile establishment, or mine, unless child is 12 years of age and is an orphan, or parents are dependent upon child. Child may work in any factory, workshop, mercantile establishment, mine, or other place owned and operated by parent.	Under 14: Not more than 10 hours a day.	Between 12 and 14: If dependent or if parents are dependent, a certificate to that effect.
Washington Sch. Laws, 1909.	Under 14: In any factory, mill, workshop, or store at any time. Under 15: For any purpose during school hours unless child presents a certificate. Under 19: Public messenger in any city of the first class.	....	Under 15: Age and schooling.
West Virginia Sch. Laws, 1911.	Under 14: In any factory, mill, workshop, or manufacturing establishment, or in any business whatever during public school hours, without written permission from the State commissioner of labor or county superintendent.	....	Age and schooling for children under 16.

of labor, *certificates*, *penalties*, *etc.*—Continued.

By whom certificate is issued or approved.	Proof of age required for certificate.	Minimum educational qualifications required for certificate.	Physical examination for certificate.	"Vacation certificate."	Law enforced by whom.	Penalty for violation.
Superintendent of schools or, if none, by a person authorized by the school board.	School record.	Read and legibly write simple sentences in English and school attendance not less than 100 days the year previous to arriving at the age of 14, or during the year previous to applying for certificate.	....	....	Inspectors, truant officers.	Employer or parent, $25 to $200 or imprisoned 10 to 30 days, or both.
Town or union superintendent.	....	....	....	....	County and municipal courts and justices. Truant officers and all informing officers authorized to make complaint.	Any violator, $5 to $200, and upon a second conviction may be so fined or imprisoned for not more than 6 months.
Circuit court, corporation court of city, judge thereof, mayor, justice of the peace.	....	....	....	....	Commissioner of labor.	Employer or parent, $25 to $100; any violator of clauses regulating hours of labor, $5 to $20.
Superintendent of schools, or county superintendent.	....	Reasonable proficiency in branches taught in first eight grades.	....	....	Attendance officer makes complaint.	Employer or parent, not more than $25.
Superintendent of schools or, if none, by a person authorized by the local school board.	School record, passport, school census, affidavit.	Read and write legibly simple sentences in English and instruction equivalent to that of the first four grades.	In cases of doubt, a certificate from a medical officer of the board of health or by a physician appointed by the board.	....	Prosecuting attorney.	Any violator, $10 to $50.

III. CHILD LABOR.—*Employments prohibited, hours*

States.	Employments prohibited.	Hours of labor.	Certificate required for employment.
Wisconsin........	Under 14: In any factory, manufacturing establishment or workshop, store, hotel, restaurant, or bakery, mercantile establishment, laundry, telegraph, telephone, or public messenger service, delivery of merchandise or any gainful occupation or employment directly or indirectly. Between 14 and 16: In any factory, or workshop, store, hotel, restaurant, bakery, mercantile establishment, laundry, telegraph, telephone, or public messenger service, or the delivery of any merchandise, or any gainful occupation or employment directly or indirectly without a permit. Under 16: Employments dangerous to life or limb, injurious to the health or depraving to the morals of the child. Under 18: Blast furnaces, running elevators, oiling machinery, etc.	Under 16: Not more than 48 hours a week, nor more than 8 hours a day, or between 6 p. m. and 7 a. m.	Age and schooling, 14-16.
Wyoming........ Compiled Stat., 1910, secs. 3101-5-7.	Boys under 14 or girls of any age: In or about any mine, except for clerical work. Under 14: In public exhibitions; in any immoral place; in any business injurious to health or dangerous to life or limb.	....	....

of labor, *certificates*, *penalties*, *etc.*—Continued.

By whom certificate is issued or approved.	Proof of age required for certificate.	Minimum educational qualifications required for certificate.	Physical examination for certificate.	"Vacation certificate."	Law enforced by whom.	Penalty for violation.
Commissioner of labor, factory inspector, judge of the county or municipal court, judge of juvenile court.	Birth certificate, school record, passport, or such other proof as may be satisfactory.	Read and write simple sentences in the English language, is familiar with the fundamental operations in arithmetic, instructed in spelling, reading, writing, English grammar, and geography, or else has passed the fifth grade and has attended school within 12 months preceding date of certificate.	....	Child between 12 and 14 may be given a permit for certain employments.	Commissioner of labor, or any factory inspector.	Parent, $5 to $25; employer, $25 to $100, or imprisonment for not more than 30 days.
....	....	....	....	....	....	Employer (in mine), $25 to $100; imprisonment for not more than 6 months may be added. Employer (in immoral or dangerous occupation), not more than $100 or imprisonment 3 months, or both; subsequent offenses, not more than $200, or imprisonment not more than 6 months.

II. COMPULSORY ATTENDANCE IN FOREIGN COUNTRIES.

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INFLUENCES LEADING TO COMPULSORY SCHOOL-ATTENDANCE LAWS.

The original purpose of compulsory school laws was to save nations from the dangers of illiteracy, and further, in Protestant nations, to enable everyone to read the Bible in his native tongue. Child-labor laws were at first distinct from compulsory school laws, but the tendency is everywhere noticeable to bring the two classes of legislation into close relation. The child-labor laws generally precede the compulsory school legislation. The reasons are obvious. The former appeal strongly to the humane instincts of a people, and the sentiment thus aroused overcomes opposition; the latter appear more as matters of expediency, and there are often difficulties in the way of their enforcement, especially in agricultural regions and in pioneer communities. In general, compulsory school laws mark a somewhat more advanced stage of social organization—the stage at which public opinion is easily formed and concentrated upon rational plans looking to the common welfare. In a sense, it may be said that modern society is based upon organized industry, and hence everything that tends to increase the intelligence and efficiency of the great body of the citizens is seen to be essential to its progress. As States pass from the agricultural stage to that of manufactures, requiring large capital and the concentration of labor, child-labor laws are passed, and these are soon followed by compulsory school laws. This process is now going on in the States of southern Europe and in the Russian Empire.

ATTENDANCE LAWS IN ENGLAND.

In England the compulsory principle has been wrought into the education law step by step, and the successive measures which have established it throughout the Kingdom give striking proof of its necessity.

The education act of 1876, which went into effect January 1, 1877, seven years after the passage of the fundamental school law, was the first to declare it the duty of parents to cause their children to obtain "efficient elementary instruction," with penalty for neglect of the duty. The same act rendered employers liable to penalty for employing children under 10 years of age, or children above 10 years and not provided with the required certificate of proficiency in reading, writing, and arithmetic, or of previous due attendance at school. (Education Act, 1876, Part I, clauses 4–10.)

The moderate requirements of the act of 1876 have been extended by subsequent legislation, of which the act of 1881 was specially important. This measure required all school districts to make by-laws defining the age limits and other conditions for partial and total exemption from school attendance, and further empowered the Education Department to make such by-laws for all districts neglecting this duty. Subsequent legislation on the subject aimed (1) to fix a minimum standard for exemption from school attendance, below which local by-laws shall not fall; (2) to raise the minimum standard. The act of 1900, the latest dealing with the subject, empowers school-attendance officers to extend their by-laws so as to include children up to the age of 14 years, raises the penalties on parents for violations of the law from 5 to 20 shillings, and increases the number of attendances required for exemption at 13 years of age from 250 to 350 for each of five years previous, and for partial exemption for children between 12 and 14 years of age to 300 attendances. Special provisions are made for the exemption of children between the ages of 11 and 13 years engaged in agriculture, and also for the attendance of half-timers who come under the factory acts applicable to children between the ages of 12 and 13.

The Government itself, it will be seen, has attempted only to fix minimum standards for exemption, which local authorities must meet. The conditions of school attendance as determined by local by-laws throughout the Kingdom, according to the latest report on the subject (1910), were as follows: Of 327 local authorities, all but 7 have fixed the ages of 5 to 14 as the limits of compulsory attendance. The limits in the seven exceptional cases are 5 to 13.

Of the total number of authorities, 87 provide for the exemption of children employed in agriculture, as empowered by the laws. The greater number (47) require examination in the fourth standard or grade for this privilege; 37 require the fifth standard, and 3 the sixth.

The advance in this matter and the close approach to a uniform standard have been brought about by the persistent efforts of liberal-minded statesmen and educational leaders, and, what is more significant, it has been accompanied by a growing disposition on the part of the labor unions to support the effort. The last step in this progressive movement is represented by the bill introduced into Parliament in 1912, providing for the entire Kingdom one uniform condition for exemption from school attendance under 14 years of age, namely, that the child "has attained the age of 13 years," and "is about to enter some employment which will, in the opinion of the authority, be beneficial to him." This measure had strong support but failed of passage.

Within the limits of the statutory law compulsory school attendance in England is regulated by the by-laws made by local authorities, and the enforcement of these, as of by-laws in general, is the duty of the local civil authority. In respect to school attendance, the education act of 1876 is explicit on this point (secs. 28–39).

Naturally, teachers and officers of education employ every means in their power to induce and to help parents to obey the law in regard to school attendance. Failing in this effort the case is turned over to the magistrates, who inflict the penalties for truancy, collect the fines, and make commitment orders against parents and others responsible for violations of the law. The federation of education committees in their annual meeting in 1912 urged that this duty should be transferred to the education authorities, on the ground that the magistrates are too lenient or too indifferent in the matter. Statistics were presented showing that some 720,000 children in England and Wales are daily absent from schools. It was also stated in this connection that there are from 50,000 to 60,000 children mentally deficient on the school rolls, and of these only 12,000 are provided for in schools or classes suitable for them. Agriculture was declared to be the only subject from which the children hopelessly deficient derived any lasting benefits.

SCOTLAND.

The education act for Scotland, 1872, made it obligatory upon every parent to secure the instruction of his children between the ages of 5 and 13, or until a certificate of exemption should be secured. The compulsory provision extends to blind children. A subsequent act (1878) fixed the standard (grade) of exemption at the fifth, which pupils should complete at 11 years of age. In 1883 the upper limit of compulsory attendance was raised to 14 years. The enforcement of this act rests upon the magistrates, as in England, and all parents failing in the obligation are subject to prosecution and penalty by fine or imprisonment. The education act of 1908 authorized school boards to make attendance at continuation schools compulsory.

IRELAND.

The education act for Ireland, 1892, included compulsory attendance provisions, in accordance with which children over 6 years of age and under 14, with certain exceptions, are required to attend school for at least 75 sessions in each half year, ending, respectively, the 30th of June and the 31st of December. In its original form the law is extremely vague with reference to the means for its enforcement. This defect was partially remedied by the local government act of 1897, which established county and rural district councils that were empowered to take measures for enforcing the school-attendance act. According to the official report for 1912, two-thirds of the pupils enrolled in the schools are in districts in which school-attendance committees have been appointed. In these the percentage of daily average attendance is 74.2 per cent of the enrollment, as compared with 69.5 per cent for the districts not having school-attendance committees.

FRANCE.

The education law of March 28, 1882, making primary education obligatory for all children between the ages of 6 and 13, required the appointment of a local school committee (commission municipale scolaire) in each commune to look after the matter of school attendance. The mayor of the commune, who is the head of the committee, is required to draw up, every year, a list of the children of school age in his commune and publicly to announce the date on which the schools open.

Parents and guardians must notify the mayor of the arrangements they intend to make for the instruction of their children, whether by public or private agencies, and in cases of neglect of this duty the names of the children not reported are inscribed by the mayor on a school list, and the persons responsible are notified of the fact. The mayor also sends to the director of each school a list of the children who should attend the same, and thus a complete record of the school population and the school attendance in each commune is secured. At the end of every month the school director must send to the mayor's office an abstract of the school register, showing the number of absences and the reasons for the same. For neglect of this duty school directors are subject to penalties inflicted by the civil authorities. The school committees may summon delinquent parents before them for warning and censure, but in case of renewed violation of the law the responsible parties are brought before the courts and sentenced to fine or imprisonment.

This system is intended to establish a sort of paternal watch over the children, a purpose which is promoted by the fund (caisse des écoles) that every commune is expected to maintain for the aid of poor children.

In practical operation the machinery for enforcing compulsory school attendance in France has proved valuable as a means of keeping a complete record of the school population, but it has failed to overcome the evils of nonattendance. This fact is fully recognized, and the Chamber of Deputies, in deliberation over a pending bill relative to this subject, has voted to abolish the communal-school committees and to transfer their duties in respect to school attendance to the justice of the peace. The bill has not yet become law.

SWITZERLAND.

In accordance with the constitution of the Federal Republic, adopted May 29, 1874, every one of the 25 Cantons of Switzerland is required to provide sufficient elementary education free to all children without prejudice to freedom of "faith and conscience." With this restriction, every Canton has entire management of its schools. The obligation imposed by the Federal constitution is enforced in all the Cantons by a compulsory school law and in 17 Cantons the compulsion extends to continuation schools.[1] The duration of the period of compulsory attendance at regular primary schools varies, ranging from six to nine years. The annual term also varies, falling as low as 38 weeks in some Cantons and rising to 44 in others. The length of the school day varies also, and is different for different ages. Thus, although the compulsory principle is rigidly enforced, there is an evident disposition to adapt its provisions to age and other conditions affecting the school attendance of individuals. The following particulars as to the compulsory requirements in two Cantons illustrate prevailing conditions in Switzerland:

Zurich.—Every child in the Canton who attains the age of 6 years before the end of April in a given year must enter school at the beginning of the corresponding school year. The pupils must continue at school for 8 years; that is to say, until the end of the school year in which he completes his fourteenth year of age. The individual communes are authorized to reduce the number of school hours a week in the seventh and eighth classes (that is, the two highest classes) to eight during the summer semester. These hours should be comprised in two forenoons. In such cases the winter semester should comprise at least 23 weeks. The primary school is divided into eight classes, corresponding to the ages of the pupils, each class representing a year. The usual duration of the school year is 43 weeks, beginning with the 1st of May; vacations cover altogether 9 weeks. The number of weekly lessons is from 15 to 20 for children in the first class; 18 to 22 for the second; 20 to 23 for the third; 24 to 30 for the fourth and sixth; and 27 to 33 for the seventh and eighth. No lesson can be given Saturday afternoon, excepting lessons in needlework. The school week, then, is 5½ days. This would give for the year 236½ school days as the maximum, which for the 8 years of the course amounts to 2,092 days. In communes in which the summer attendance for the seventh and eighth classes is reduced to 8 hours, or two half days, the entire school period would be reduced to 1,712 days.

Uri.—In the Canton of Uri a child enters school the year in which his seventh year of age is completed, and he is obliged to attend school until his thirteenth year of age is completed; that is, until he has six years of compulsory attendance at the primary school. Following this, he must attend a continuation course for two years. The six years of the primary school comprise a minimum of 30 weeks a year. The length of the school week varies, but on an average is 5 days. This gives 900 days for the 6-year course. To this must be added 120 days for the two years in the continuation school, making a total of 1,020 days.

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[1] See table, p. 83.

Local authorities, i. e., school boards, prefects of the district, and municipal authorities, are charged with the enforcement of the compulsory laws; if need be, the superior officers of State intervene. As a rule, however, no endeavor is made by parents to evade the obligation to secure the instruction of their children.

Organization of general continuation schools and of preparatory course for recruits in Switzerland.[1]

Cantons.	Continuation schools.				Recruits, preparatory course.	
	Obligatory or voluntary.[2]	Number of years or winter courses.	Minimum number of hours per course.	Age of pupil.	Obligatory or voluntary.	Number of courses and hours.
Zurich	Voluntary	1-3		Above 15		
Bern	Obligatory	2	60	15-18	Voluntary	
Luzern					Obligatory	2 courses of 4 hours.
Uri	Obligatory	3	40	16-19	do.	1 course of 20 hours.
Schwyz	Voluntary			Above 14	do.	2 courses of 40 hours.
Obwalden					do.	1 course of 40 hours.
Nidwalden					do.	1 course of 90 hours.
Glarus	Voluntary		About 80			
Zug	Obligatory	2	About 60	17-19	Obligatory	3 days.
Fribourg	do.	3	70	16-19	do.	About 20 hours.
Solothurn	do.	3	80	15-18	do.	1 course of 36 hours.
Basel City	Voluntary				Voluntary	
Basel Province	Obligatory	2	About 70	17-18	do.	12 hours.
Schaffhausen	do.	2	About 50	17-18		
Appenzell A. Rh.	do.	2-3	60	16-18		
Appenzell I. Rh.	do.	3	80	15-16	Obligatory	80 hours.
St. Gallen	do.	2-3	80	16-19		
Graubunden	do.	2-3	90	16-18		
Aargau	do.	3	80	16-19		
Thurgau	do.	3	50-60	15-18		
Tessin	do.	3-4	60	15-18	Obligatory	12 days of 4 hours.
Waadt	do.	3-4	60	15-19	do.	24 hours.
Wallis	do.	4	120	15-19	do.	50 hours.
Neuenberg	do.	2	64	17-18	do.	24 hours.
Geneva	Voluntary				do.	36 hours.

[1] Guex, François, annuaire de l'instruction publique en Suisse, 1910, p. 227.
[2] The obligation is imposed upon boys only, excepting in the canton of St. Gallen.

ACTION OF LOCAL COMMITTEES IN OTHER COUNTRIES.

In the *Scandinavian* countries the matter of school attendance is under the close surveillance of the local school boards and the diocesan boards. These bodies summon the delinquent parents before them for investigation and warning; cases of contumacy are reported to the central authorities, but it is seldom necessary to resort to these extreme measures. It should be noted that in all Lutheran countries the pastors are members of the local school committees and the ecclesiastical authorities are included in the central administration of school affairs; clerical influences in fact have even greater effect than the law in preventing neglect of school attendance.

Italy.—The education law of 1877 provided for the formation of local school attendance committees, similar to those of France; but in the past this law was seldom carried into effect. The success of more recent legislation on the subject will depend necessarily upon the supply of school buildings, for which special appropriations have been made.

The Netherlands.—The agents for enforcing the compulsory law in the Netherlands, as in France, are local committees; but in the latter country these committees are made up from the communal and cantonal authorities; in the Netherlands the local clergy, the parents, and the teaching corps are all represented in the committees, the members of which are appointed by the communal councils. Infringements of the law are brought to the attention of the school inspectors, and parents or guardians who persist in its willful neglect are summoned before the district judge, who takes final action in the matter.

Japan is the only country of Asia having a compulsory school attendance law. Children are admitted to school at 6 years of age and may continue till 14. The obligatory period covers the ages 6 to 12 by ordinance of 1908. The Government appears to have been influenced by the example of France in respect to the means for enforcing the law.

The mayors make out the register of the school children in their respective districts, which is furnished to the school directors. If a child fails to report when the school opens, notice is sent to the parent or guardian, and if the absence continues, at the end of seven days the case is reported to the mayor, who summons the responsible party for further inquiry. If the neglect still continues, the matter is referred to the prefect of the district, who can pronounce sentence upon the guilty person. As a rule it is not necessary to resort to this extreme measure.

In the countries here grouped care is taken to exercise paternal watchfulness over the children, and to excite the willing cooperation of parents in the public effort for the child's welfare. In other words, the paternal spirit prevails over the penal in the course pursued.

RESULTS OF COMPULSION.

Illiteracy is generally taken as a measure of the efficiency of a school system, but in this respect it must be considered with conditions which affect materially the enforcement of school laws, including that of compulsory attendance. Chief among these conditions are the extent, racial character, and density of the population. Comparison of great nations with small nations in respect to education carries little weight; for example, Denmark, with its compact population of two and one-half millions, would be able to maintain school attendance even without a compulsory law; there is evidently no basis of comparison between such a country and an empire like Russia, with a population in the European division of 135,860,000, and a density of only 68 per square mile. Under all conditions, however, a compulsory school law properly enforced has proved to be an effective means for eliminating illiteracy. The following statistics, which bring into comparison selected countries of Europe in respect to school attendance and illiteracy according to the latest official information, are convincing on this point. For more effective presentation, the countries are arranged in two groups in the table pertaining to illiteracy; the first group comprises the States of Europe in which the percentage of illiteracy on the basis considered falls below 10 per cent, and the second group States in which it is in excess of this ratio.

Population and enrollment in elementary schools in certain European countries.

Countries.	Population.	Ratio of enrollment in elementary schools to population.	
		Year.	Per cent.
Austria-Hungary:			
Austria	28,567,896	1909	15.60
Hungary (including Croatia and Slavonia)	20,840,678	1910	14.00
Belgium	7,423,784	1910	12.50
Denmark	2,775,076	1910	13.57
France	39,601,509	1910	14.24
German Empire	64,903,423	1910	16.00
Great Britain	40,834,714	1911	16.87
Italy	34,269,764	1908	8.75
Netherlands	5,945,155	1911	15.42
Spain	19,588,685	1910	10.40
Sweden	5,521,943	1910	14.31
Switzerland	3,741,971	1910	14.38
Russia	163,778,000	1910	2.56

Illiteracy in certain countries, grouped according to percentages.

GROUP I.—COUNTRIES HAVING FEW ILLITERATES.

Countries.	Year.	Per cent of illiterates.	Basis of estimate.
Denmark	1907	0.2	Army recruits.
France	1910	2.97	Do.
Great Britain	1904	1.5	Marriage register.
German Empire	1905	.03	Army recruits.
Netherlands	1908	1.4	Do.
Sweden	1907	.3	Do.
Switzerland	1905	.5	Do.

Illiteracy in certain countries, grouped according to percentage—Continued.

GROUP II.—COUNTRIES HAVING LARGE PROPORTION OF ILLITERATES.

Countries.	Year.	Per cent of illiterates.	Basis of estimate.
Austria[1]	1900	26.2	Population above 10 years of age.
Hungary[2]	1900	40.0	Do.
Belgium[3]	1900	18.6	Do.
Italy[1]	1901	48.0	Do.
Spain[1]	1900	58.7	Do.
Russia[3]	1897	70.0	Do.

[1] Compulsory law not well enforced.
[2] Including Croatia and Slavonia, in which compulsory law is not enforced.
[3] No compulsory school attendance law.

The benefits of a compulsory law are also illustrated by the decrease of illiteracy even in countries where the full enforcement of the law is not yet possible. This is strikingly shown in the case of Italy. In this Kingdom a compulsory attendance clause was included in the education law of 1877, but it remained for many years a dead letter. In 1904 a law was passed greatly strengthening the compulsory provisions. As a result of the earnest efforts made to carry this law into effect, the ratio of illiteracy, which in 1901 was 42.5 per cent for males above 6 years of age, was greatly reduced. In 1905 only 30.6 per cent of the recruits were illiterate, and those from several districts (circondari) were all able to read and write.

Roumania has a compulsory school law dating from 1896, and to its enforcement is attributed the marked decrease in the ratio of illiterates, which fell from 78 per cent, as shown by the census of 1899, to 60.6 per cent in 1909. For the rural population only, the decrease was from 84.8 per cent to 66.3 per cent.

In respect to countries in which there is practically no illiteracy it must be admitted that there are other causes conducing to this result. Chief among these is the military system, which obliges all men to serve for a period in the army, and on entering the service to pass an examination in the elementary studies. Those who fail in this test must attend special classes or schools for recruits.

The passage in 1900 of a compulsory school law for the Netherlands is a very significant fact in the progress of the principle. On account of the various agencies carrying on primary education, their equal recognition before the law, and the reluctance to rouse denominational antipathies, the compulsory provisions included in previous education bills had been dropped. School attendance, however, has been promoted in the Netherlands by prizes and rewards offered by local school committees, and by the examination in elementary subjects required for admission to the numerous subsidized trade and industrial schools. Therefore, without compulsion, school attendance has been high in this small Kingdom and the percentage of illiteracy low; nevertheless the general concurrence of opinion finally carried a compulsory provision in the school law. Undoubtedly the census of 1889 conduced to this result. The enumeration showed 1.4 per cent of illiterates in the number of army recruits in the Netherlands, which was contrasted with the conditions in Denmark and Germany, from which countries illiteracy has been practically eliminated. It is noticeable that statistics for the Netherlands, based upon the census of 1909, show a reduction in the ratio of illiterate recruits from 1.4 to 1 per cent.

Among other evidences of the importance of compulsory school attendance laws is the movement for extending the compulsion to continuation schools. The subject is agitated at the present time in all the principal countries, although comparatively few have yet taken positive action in this matter. In Switzerland attendance upon continuation schools is compulsory in 17 out of 25 cantons.

Five States of the German Empire have extended the compulsory provisions, either wholly or partially, to continuation schools. Wurttemberg makes attendance at continuation schools compulsory for boys aged 14 to 18, and for girls aged 14 to 15 (law of Aug. 17, 1909); in Baden attendance upon continuation schools is compulsory for boys for two years, for girls one year; in Saxony such attendance is compulsory for boys; Bavaria, by school regulations of June 4, 1903, requires attendance at a Sunday school to the completion of the sixteenth year, or attendance at vocational school may be substituted.

The Scotch education act of 1908 authorized the school boards to make attendance upon continuation schools compulsory.

Ontario, by law of 1912, authorized local authorities to make attendance at continuation schools compulsory.

Compulsory school laws carry with them the sense of additional responsibility on the part of the public for the welfare of children; hence, in their train follow provisions for supplying the pressing wants of the poorest children and of ministering to their physical ailments; there follows also discrimination as to the moral responsibility of juvenile offenders; hence, juvenile courts and reform schools conducted on humane and rational principles grow naturally out of the endeavor to provide for the instruction of every child.

TABULAR VIEW OF ATTENDANCE LAWS IN FOREIGN COUNTRIES.

The following table (p. 91) comprises the foreign countries in which a compulsory school attendance law is well established, and the principle of compulsion supported by custom and opinion. The presentation gives in epitome the general conditions covered by all laws on the subject, and also the particulars in which they vary most.

In foreign countries the compulsory period begins, as a rule, at an earlier age than in the United States. The tendency to postpone school attendance in the United States is due to different causes; in several States this course is necessary on account of the sparse population and the poor roads; in more densely populated regions there is a willingness to prolong the period of the free activity of childhood; in European countries, on the contrary, there is a disposition to hasten the entrance of children into industrial life.

In all the countries included in the table, allowance is made for absence on account of sickness, the want of an accessible school, and other circumstances which are beyond the control of parents. There are, however, additional causes for exemption from school attendance, arising from conditions special to the respective countries, which are named in the laws. Such causes are indicated in a measure in the table (col. 5).

In order to complete the survey with respect to compulsory attendance upon the ordinary primary schools, reference should be made to countries in which legislation on the subject is of very recent date or, if of long standing, has recently been the subject of new and more stringent provisions.

Russia.—The subject of universal popular education in the Russian Empire engaged the attention of the first and of the second Duma, but without definite results. The third Duma proceeded upon the principle that the necessary conditions must be supplied by a better organization and more liberal support of the existing schools, and by systematic provision for increasing the number of schools up to the full requirement of the vast population of the Empire. In accordance with this purpose a measure was adopted by the third Duma providing for an annual appropriation for the successive years 1909 to 1912, inclusive, to form a fund for supplementing local appropriations for school buildings. The appropriation demanded for the four years would amount to 25,000,000 rubles ($12,875,000). The leaders of the legislative body favor the adoption of a compulsory law as soon as the supply of school accommodation makes its enforcement possible. The recommendations of the Duma on the subject, however, were not approved by the imperial council.

In Finland and in the Baltic Provinces of Russia, in accordance with the prevailing custom in Lutheran countries, the parish clergy are required to see that the children of their charge are instructed in the elements of reading and writing, and in the catechism, as a prerequisite to confirmation. By the Finnish school law of 1866 the civil authorities were made responsible for secular education, and towns were required to establish schools for the elementary education of all children within their limits; the law provided for the election of local school committees who are charged with its enforcement.

The town schools are of two classes: Lower primary, or infant schools, and primary schools proper. The elementary secular instruction, which was formerly under the direction of the clergy, is now given in the infant schools, together with religious instruction, but children who receive this elementary instruction at home are not obliged to attend the infant school. The course of the regular primary school covers four years and is compulsory for all children, ages 9 to 12 (or 10 to 13, inclusive), who are not otherwise instructed. If continuation or repetition classes exist, attendance may be required in those for a year after the primary school period. By an ordinance of 1898 the obligation to establish schools was extended to the rural communes.

In the three Baltic Provinces of Russia—Esthonia, Livonia, and Courland—elementary education is compulsory in accordance with the ecclesiastical requirements.

Southern Europe.—The recent political movements in southern Europe have been marked by new educational demands, and the compulsory principle is securing recognition in all the countries that may properly be included in a discussion of this section of the continent.

In the kingdoms occupying the three southern peninsulas of Europe, primary education is compulsory under existing laws, and notwithstanding the many obstacles to the enforcement of this principle, it has been carried into practical effect in many of the chief cities. Current discussions of education in these countries emphasize the importance of more stringent measures for insuring the elementary education of all the people. In Italy a compulsory provision applicable to children 6 to 9 years of age was comprised in the education law of 1877; by a law of 1904 the upper limit was extended to 12 years of age in communities maintaining a higher primary school.

The kingdoms that were formerly parts of Turkey in Europe, namely, Bulgaria, Montenegro, Roumania, and Servia, have all declared primary education compulsory, either by constitutional provision or by law. The enforcement of the provision has been hindered by internal disturbances and by the want of sufficient school accommodation; the war with Turkey has prevented present progress in education and in internal improvements in the nations involved in the conflict.

Empire of Turkey.—The law of 1869 regulating public instruction in the Turkish Empire declared education obligatory for boys from 6 to 11 years of age, inclusive; for girls from 6 to 10. The exemptions were numerous and the law has seldom been enforced.

Since the Young Turk party came into power, education has been a subject of earnest consideration by the Government, and an education bill which reaffirms the principle of compulsion was presented to the legislature in 1910 by the minister of public instruction. The measure was still pending when the war broke out.

In the Latin States of North and South America compulsory provisions are a feature of the school laws, but little progress has been made in their enforcement. At the present time the matter is one of serious consideration in several of these countries, particularly in Peru, Chile, Argentina, and Uruguay, which are attempting the reorganization of their educational systems. As industrial and civil conditions improve, the apathy of the people diminishes, a change which is shown by the recent rapid growth of a diffused public-school sentiment in Argentina and Uruguay.

The significant omissions from the list of countries having compulsory school attendance laws are Belgium, Quebec, and Manitoba.

Compulsory education in foreign countries.

Countries.	Date of present law.	Age limits.[1]	Annual period.	Attendance required.	Penalty.
1	2	3	4	5	6
CENTRAL EUROPE.					
Austria-Hungary:					
Austria	1869	6-14		Until scholar has acquired prescribed subjects, religion and reading, writing and arithmetic tested by examination for certificate.	$3.50 (maximum) or imprisonment up to 2 days.
Hungary	1868	6-12 (12-15)	8 months, country; 10 months, town.	Six years, day school. Continuation or revision school; evening or Sundays at stated times.	First offense, warning; second, reprimand; subsequent, fine from 35 cents to $1.50.
France	1882	6-13	Full term	Exempt, if certificate of primary studies is obtained; examination for this open to children 11 years of age.	First and second offense, warning; subsequent, fine $3 (maximum) and imprisonment 5 days.
German Empire (typical States):					
Bavaria		6-13 (13-16 secular Sunday schools).		Until scholar has acquired prescribed subjects and passed test examinations.	
Prussia		6-14		Eight years	Each offense 70 cents (maximum) or imprisonment up to 3 days.
Saxony	1873	7-14 (and 14-17 boys only).		Exempt after 7 years if prescribed standard is reached.	
Wurttemberg	1836, 1877, 1895.	7-14 (14-18 boys, 14-16 girls).	Every school day		Fine or imprisonment.
Luxemburg (grand duchy)		7-13			
Netherlands	1900	6-12 or 7-13.		Exempt at 12 years of age if 6 consecutive years have been passed in primary schools.	
Switzerland (typical cantons):					
Berne	1870	6-15 (15-18)	Five-sixths of possible attendance.	Exemption on completion of 8 years' course, if examination is satisfactory.	Fines and imprisonment.
Geneva	1886	7-13	40 weeks, 24 hours each.		Do.
Grissons	1853, 1859	7-15	30 hours every school week.		Do.

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[1] The age limits in this column cover the age period in each country, during which the compulsory law may be enforced; from column 5 it will be seen that in many cases exemptions are allowed between the age limits; the age limits in parentheses relate to continuation schools.

Compulsory education in foreign countries—Continued.

Countries.	Date of present law.	Age limits.	Annual period.	Attendance required.	Penalty.
1	2	3	4	5	6
CENTRAL EUROPE—continued.					
Switzerland (typical cantons)—Continued.					
Neuchatel	1872	6–14			Fine, 40 cents (minimum), or imprisonment 30 days (maximum).
Tessin	1882	6–14 (15–18)	28 hours a week for 6 to 9 months.		Each offense 2 to 3 cents and 4 hours' imprisonment.
Vand	1865	6½ - 14½ (15–19).	33 hours every school week.		Warnings; subsequently, fines, 60 cents to $3.
Zurich	1859	6–14	Full time		Penalties for 10 absences.
NORTHWESTERN EUROPE.					
Great Britain and Ireland:					
England	1900	5–14	Full term, unless by special arrangement.		Determined by local laws.
Scotland	1872	5–13	Option of local authorities.		Fine, $5 (maximum), or imprisonment 14 days.
Ireland	1892	6–14	do		
SCANDINAVIAN COUNTRIES.					
Denmark	1904	7–14	Determined by local authorities.		Fines and imprisonment.
Norway	1889	7–14			First offense, warning; subsequent, fines 1 to 25 kroner ($0.26¾ to $6.70).
Sweden	1882, 1897	7–14	34½ weeks		
ASIA.					
Japan	Ordinance 1907.	6–12			
AUSTRALASIA.					
Australia:					
New South Wales	1880	6–14	70 days each half year.		Fine, 5 shillings ($1.20) to 20 shillings ($4.80); or imprisonment 7 days.
Queensland	1875	6–12	60 days in each half year.		
South Australia	1875, 1891	7–13	35 school days per quarter.		Fine, $1.25 to $55.

Tasmania	1885, 1886	7-13	3 days a week	Exempt at 11 years of age, if able to pass required examination.	
Victoria	1872	6-14	40 days each quarter.	12 years of age, if able to pass examination.	Fine, 5 shillings ($1.20) to 20 shillings ($4.80).
West Australia	1899, 1907	6-14	Every school day		Do.
New Zealand	1877. 1901	7-14	From two-thirds to four-fifths total number of sessions.		Fine, 5 shillings ($1.20) to 40 shillings ($9).
NORTH AMERICA.					
Canada:					
Alberta		7-12[1]			
British Columbia	1891, 1901	7-12[1]	Six months		Fines, first offense, $5; subsequent, each, $10.
New Brunswick	1906	7-12		In towns, 12 years of age and examination in work or grade 7; above 13, without examination, if necessary.	
Northwest Territories		7-12[1]			
Nova Scotia	1895, 1900	7-12	120 full days		Fines.
Ontario	1891	8-14	Full term		Do.
Prince Edward Island	1887	8-13			
Saskatchewan		7-12[1]			

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[1] Inclusive.

III. COMPULSORY EDUCATION IN GERMANY.

By W. Carson Ryan, Jr.,
Editorial Division, Bureau of Education.

The successful enforcement of compulsory education has long been an enviable feature of the German school system. Although the ages and periods of attendance vary, there are practically no children in the German Empire who evade the laws. The occasional exceptions are in the case of families of strolling actors, acrobats, etc., and the shifting population engaged in river navigation. Some of the figures will show the almost perfect conditions: Out of 5,754,728 children of school age in Prussia in 1901, only 548 evaded attendance. In 1895 the evasions were 487 out of 5,317,037 children. Both of these figures represent a betterment since 1871, when there were 20,783 evasions out of a school population of 4,464,906. Although Pursian conditions are better standardized than those in other parts of the empire, and it is important not to consider Prussia as Germany, the following table of Prussian school enrollment, as compared with population, will serve to indicate the consistency with which the record of schooling is maintained.

Table showing ratio of public elementary-school children to total population in Prussia since 1822.

Year.	Children in school.	Population.	Per cent.
1822	1,427,045	11,664,133	12.2
1825	1,577,999	12,256,725	12.9
1828	1,791,703	12,726,110	14.8
1831	1,917,934	13,038,960	14.7
1834	2,102,271	13,507,999	15.6
1837	2,169,247	14,098,125	15.4
1840	2,224,239	14,928,501	14.9
1843	2,328,146	15,471,084	15.0
1846	2,433,333	16,112,938	15.1
1849	2,453,062	16,331,187	15.2
1852	2,583,565	16,935,420	15.2
1855	2,615,382	17,202,831	15.2
1858	2,719,072	17,739,913	15.3
1861	2,778,208	18,491,220	15.0
1864	2,825,322	19,255,139	14.7
1867	3,035,275	19,672,237	15.4
1871	3,900,655	24,639,706	15.8
1878	4,200,160	26,664,427	15.8
1882	4,339,729	27,694,854	15.7
1886	4,838,247	28,645,832	16.9
1891	4,916,476	29,955,281	16.4
1896	5,236,826	31,855,123	16.4
1901	5,670,870	34,472,509	16.5
1911	6,572,140	40,165,219	16.4

Figures of a number of German municipalities for 1910 reveal how consistently the ideal in attendance is carried out to the very end of the system. In certain cities having an eight-year course the percentage of children finishing the eighth grade was as follows: Wiesbaden, 99.46; Frankfort on the Main, 99.2; Flensburg, 99.77; Leipzig, 99.58; Dresden, 99.67; Zwickau, 99.93; Plauen, 98.91; Chemnitz, 99.62; Mainz, 99.4; Bremen, 98.62. These cities are above the normal, to be sure, yet that so many communities can show such a record is sufficiently noteworthy.

The agencies in this admirable enforcement of compulsory education may be summed up as follows: (1) Strict compulsory laws long on the statute books; (2) an imperial child-labor law which is enforced; (3) a thorough system of official inspection by school, church, and civil authorities; (4) careful registration methods, which make sure that the child is not lost sight of in a change ot residence.

(1) *Legislation.*—Compulsory education laws have been on the statute books in German countries for considerably more than a century. They go back at least to Friedrich Wilhelm I of Prussia (Sept. 28, 1717):

> Hereafter in those places where schools exist the parents are required on pain of heavy punishment......to send their children to school every day in winter; and in summer, when the children are needed for farm work, at least once or twice a week, in order that they may not entirely forget what they have learned during the winter.

The principle is more definitely enunciated in Frederick the Great's general law of 1763:

> First of all, we decree that all our subjects, whether parents, guardians, or employers, upon whom the education of youth devolves, shall send to school their own children, boys and girls, as well as those intrusted to their care, not later than the fifth year, in order that they may continue there into their thirteenth and fourteenth year; and they shall keep them at school until they have not only obtained the essentials of Christianity and know how to read and write readily but can also make satisfactory answer with regard to those matters which are taught them in reading books ordained and approved by our consistories.

The general law of 1794 provides:

> SECTION 43. Every inhabitant who can not or will not provide the necessary instruction for his children in his own household is required to send them to school after the completion of the fifth year.
>
> SEC. 46. The school instruction must be continued until a child, in the discretion of his spiritual guide, has obtained the knowledge necessary for an intelligent person of his station in life.

The Code of 1850 declares: "Parents and their representatives shall not leave their children or wards without the instruction which is prescribed for the public schools."

Compulsory education is also covered by legislation of 1872, 1878, and 1891. The 1872 law changes "spiritual guide" in the law to "school inspector." The 1891 law says: "The compulsory education period of a child ends with the close of the child's completed fourteenth year."

The enforcement of the law is left to the police authorities. In case of infraction the school inspector invokes the aid of the police, and legal proceedings are instituted against the parents, who are at first fined, and in case of repeated offense may be imprisoned, usually for eight days.

In Saxony the punishment provided by law for nonattendance is a fine, or imprisonment from one day to six weeks; but the testimony is that legal proceedings are seldom undertaken.

In Bavaria there is no compulsory education law; the subject is covered by regulations.

In Wurttemberg parents who fail to send their children to school regularly are first warned, then fined, and, if need be, imprisoned.

As in most countries, the laws allow certain exemptions. Entrance into school at the lower age may be deferred in the case of illness or constitutional weakness, especially where the distance from school is considerable, and at the other end of the compulsory period likewise children may for sound reasons be freed from the action of the law. In the year 1901 of all children of school age in Prussia 10,672 were unable to attend on account of mental or bodily defects; 16,109 could not be received immediately after the completion of the sixth year; and 53,794 were released from attendance before the end of their fourteenth year.

Education of the deaf and dumb is not compulsory in most of the German States. In Prussia it is compulsory in only one Province, Schleswig-Holstein.

The question of compulsory or optional attendance in continuation schools has heretofore been left to the respective municipalities.[1] The Prussian State Government, however, by conditioning its annual appropriations upon the establishment of compulsory attendance, has succeeded in inducing most of the communities to make the attendance compulsory. In 1910 Prussia had 1,818 industrial continuation schools (gewerbliche Fortbildungsschulen), with 321,226 students; 59 association schools (Vereinsschulen), with 5,831 students; and 285 guild schools (Innungsschulen), with 11,952 students. Of the industrial continuation schools, 1,749 (including 61 work schools) had compulsory attendance and 69 optional attendance. In the 59 association schools, which are maintained by apprentices, mechanics, manufacturers, etc., the attendance is optional.

After agitation for a number of years a draft of a national law has recently been submitted to the Prussian Landtag, or Legislature, which makes three years' attendance at an industrial or commercial continuation school obligatory on the part of all boys under 18 years of age who are employed in industrial or commercial work in the particular community. The boys usually finish in the common schools at the age of 14 or 15, and, according to the new State law, their compulsory attendance at the continuation school will continue for three years or until the end of their apprenticeship, but not beyond the eighteenth year. It is also provided in this new law that one can be released by the school authorities from the obligation to attend the public industrial continuation school by attendance during the required legal period and for an equal number of hours at a guild or other continuation school or trade school, provided that the instruction at such school has been recognized by the president of the respective government district (Regierungs-Präsident) as an adequate substitute.

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[1] This and the following paragraph are taken from a statement by Ralph C. Busser, United States consul at Erfurt. See Bulletin, 1913, No. 54, U. S. Bu. of Ed., p. 15.

(2) *Child-labor law.*—The imperial child-labor law of 1869 forbade without exception the employment of children under 12 years of age, and its rigorous enforcement has aided materially in carrying out compulsory education laws.

(3) *Inspection.*—Church and civil authorities cooperate in the work of insuring attendance. The local school authorities have their own regulations whereby they take action to compel attendance. In Prussia and in most other parts of the German Empire, however, the almost perfect attendance is largely due to the pastors, who are especially authorized to see that the children go to school.

(4) *Registration methods.*—Prussia early took the lead in instituting careful registration methods and in the compilation of dependable school statistics—the first steps in educational progress; and the other German States have in the main followed Prussia's example. Thus, although educational administration is not under centralized imperial control, there is practical unanimity in enrollment and registration methods throughout the German Empire.

The work of the direct agencies thus outlined is made effective by the following facts of German civilization which need always to be borne in mind in considering compulsory education in Germany: Relative density of population, allowing stricter surveillance than in less thickly settled countries; a people more nearly homogeneous than that of the United States; an innate love of education produced by generations of men with cultural ideas, apt to be lacking in a new nation where action and personality tend to be treasured above bookish attainments; strongly centralized government, which makes of the school a system in a sense in which ours seldom is; close interrelation of church and state in public education, involving vigilance on the part of both agencies to see that the child is in school; and, above all, a strongly developed public sentiment on the subject of school attendance which makes truancy practically impossible.

The effects of successful compulsory education show themselves in a number of ways not easily susceptible of statistical analysis. Vanishing illiteracy is one indication that can be measured; 1910 figures give the German Empire the lowest illiteracy record among the nations—3 in 10,000.

But it is not merely in the external phenomena of literacy or illiteracy that long-continued compulsory education shows its effects—the disciplinary value to the national mind of generation after generation of educated citizens is incalculable.

IV. THE NEED OF COMPULSORY EDUCATION IN THE SOUTH.

By William H. Hand,
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Thirty-nine States of the Union have State-wide compulsory school-attendance laws of varying degrees of compulsion and enforcement. The remaining nine States all belong to the Southern group. Four of the Southern States, viz, Maryland, Tennessee, Arkansas, and Louisiana, have laws making attendance compulsory in parts of these States. These laws are generally known as local-option laws. Of the laws of these four States, perhaps that of Arkansas actually reaches the greatest number of children; in none of the four has compulsory attendance been in force long enough to make any marked decrease in the State's illiteracy. South Carolina, Georgia, Florida, Alabama, Mississippi, and Texas are yet without any kind of compulsory-attendance law.

Many people are still debating in a purely academic way the need, the wisdom, and the feasibility of something which has been tested and accepted by the majority of peoples speaking English, German, and French. Nevertheless, the mere fact that other sections of the Union and other countries have enacted such laws is of itself not conclusive evidence that the Southern States should enact them. Any logical argument for or against compulsory attendance must be based on conditions as they actually exist.

Confining the study to the native white population of native parentage, the following tables show the conditions in the Southern States, and the relative illiteracy in the South and other parts of the United States and in four foreign countries. The figures for the United States are from the Census Report of 1910. These figures are not the guesswork of some partisan statistician, but the cold facts given to the census taker by the fathers and mothers of the children.

Exhibit A.—*Native white illiterates 10 years of age and over.*

	Per ct.
New England States—6 (all under compulsory laws)	0.7
Middle Atlantic—3 (all under compulsory laws)	1.2
East North Central—5 (all under compulsory laws)	1.7
West North Central—7 (all under compulsory laws)	1.7
South Atlantic—9 (3 without compulsory laws; 3 with local option)	8.0
East South Central—4 (2 without compulsory laws; 1 with local option)	9.6
West South Central—4 (1 without compulsory laws; 2 with local option)	5.6
Mountain—8 (all under compulsory laws)	3.6
Pacific—2 (both under compulsory laws)	0.4

EXHIBIT B.—*Native white illiterate males of voting age.*

	Per ct.
New England States	1.0
Middle Atlantic	1.5
East North Central	2.3
West North Central	2.3
South Atlantic	9.0
East South Central	11.1
West South Central	6.0
Mountain	2.8
Pacific	0.5
France, male adults	4.7
England, male and female adults	3.0
Scotland, male and female adults	2.4
German Empire, male adults	0.5

EXHIBIT C.—*Showing rank of the 12 States without State-wide compulsory laws in percentage of illiteracy of native whites 10 years of age and over.*

States.	1910	1900
Maryland	32d.	32d.
Texas	33d.	35th.
Florida	37th.	38th.
Mississippi	38th.	37th.
Arkansas	40th.	41st.
Georgia	41st.	42d.
Virginia[1]	42d.	40th.
Tennessee	43d.	46th.
Alabama	44th.	47th.
South Carolina	45th.	44th.
North Carolina[1]	47th.	49th.
Louisiana	48th.	48th.

[1] Virginia and North Carolina passed their State-wide compulsory laws after the census of 1910.

In Exhibit D following are first shown the six States without compulsory-attendance laws. Next are shown the six States with local-option compulsory laws. Massachusetts, Rhode Island, and Connecticut are taken as representative of New England, each with a compulsory-attendance law enacted years ago and requiring long terms of attendance enforced by rather heavy penalties. Wisconsin and Minnesota are taken as a type of the newer West, with a compulsory attendance rather rigidly enforced. West Virginia and Kentucky are taken as specimens of recent compulsory-attendance laws at first mild in form and not very rigidly enforced.

EXHIBIT D.—*Native white illiterates 10 years of age and over.*

States.	Illiterates.	Per cent.
South Carolina	50,112	10.5
Georgia	79,875	8.0
Florida	14,331	5.2
Alabama	84,204	10.1
Mississippi	28,344	5.3
Texas	60,881	3.3
Maryland	17,464	3.0
Virginia	81,105	8.2
North Carolina	131,992	12.3
Tennessee	120,384	9.9
Arkansas	54,221	7.1
Louisiana	82,100	15.0

EXHIBIT D.—*Native white illiterates 10 years of age and over*—Continued.

States.	Illiterates.	Per cent.
Massachusetts	3,428	0.4
Rhode Island	944	.7
Connecticut	1,707	.5
Wisconsin	3,223	.6
Minnesota	1,536	.4
West Virginia	50,580	6.7
Kentucky	145,156	10.7

EXHIBIT E.—*Native white male illiterates of voting age.*

States.	Illiterates in 1900.	Illiterates in 1910.	Per cent in 1910.
South Carolina	15,643	17,535	11.0
Georgia	31,914	29,936	8.9
Florida	5,470	5,026	5.1
Alabama	30,680	30,389	10.9
Mississippi	11,613	11,129	6.1
Texas	24,180	23,642	3.7
Maryland	10,191	8,097	4.0
Virginia	35,057	33,488	9.9
North Carolina	54,208	49,619	14.1
Tennessee	51,247	47,479	11.5
Arkansas	22,546	20,343	7.7
Louisiana	24,681	28,091	15.6
Massachusetts	1,927	1,700	.5
Rhode Island	550	466	1.0
Connecticut	1,040	893	.7
Wisconsin	1,754	1,514	1.0
Minnesota	737	732	.5
West Virginia	23,024	20,666	7.8
Kentucky	62,182	59,314	12.8

These figures can have but one meaning—that compulsory education reduces illiteracy and that the South sorely needs to have hers reduced. In a monarchy the primary object in educating its citizens has been to make good, intelligent, loyal subjects. In a democracy, such as ours, the primary object in educating the people is to make good, intelligent, loyal, and prosperous citizen-sovereigns. Admittedly we are making "the most stupendous experiment in Government" that the world has ever seen. We are taking our native-born stock and fusing with them foreigners from all quarters of the globe. We are making of practically every one of these an American citizen, clothing each with the power to make and to administer the laws of a great nation and to direct and control all the forces and resources of our institutional life. To meet successfully such tremendous responsibilities requires intelligence and training of the highest constructive order.

If our Government is to achieve and maintain that eminence among the powers of the earth to which we pledge our faith, it must secure for itself an intelligent, efficient, and orderly citizenship. Intelligence and efficiency lie at the very foundation of any people's greatness. Intelligent and efficient citizens are a State's fundamental asset, and the State which has the largest percentage of illiteracy has the smallest percentage of effective citizens. Ambassador Bryce has repeatedly emphasized the fact that America has put unlimited power into the hands of the people, and if the people are to enjoy that power without abusing it they must be educated; or, as a recent writer expresses it, "If the people are to govern, they must know how to govern." By the people is meant all the people. The South could once boast of an administrative aristocracy capable and highly trained—in the language of Henry W. Grady, "almost feudal in its grandeur." The conditions conducive to such a society have been swept away, and the South to-day is preeminently the land where training and fitness of the masses are indispensable. It must educate all.

No sound-thinking man would for a moment contend that education, in the common acceptation of that word, is a panacea for political and social ills, nor would he claim that an illiterate man is necessarily not a good citizen. But in a democracy where manhood suffrage practically prevails institutional life is exposed to tremendous dangers when in 12 States 304,774 (Exhibit E) native white males of voting age, or 10 per cent of the white voting population, are unable to read the names printed on the ballots they are supposed to cast intelligently for the government of the State. Please note the insignificantly small decennial decrease in native white male illiterates of the voting age in Alabama and Mississippi, while in South Carolina and Louisiana there is a material increase.

The revelations of the Thirteenth Census are highly gratifying in the main. The decrease in illiteracy in the Southern States, as in the entire Union, between 1900 and 1910 is highly encouraging. The following exhibit as a whole is at once one of victory and of promise:

EXHIBIT F.—*Showing the actual decrease of native white illiterates 10 years of age and over, between 1900 and 1910.*

States.	In 1900.	In 1910.	Decrease.
South Carolina	54,177	50,112	4,065
Georgia	99,948	79,875	20,073
Florida	16,470	14,331	2,139
Alabama	102,779	84,204	18,575
Mississippi	35,432	28,344	7,088
Texas	70,006	60,881	9,125
Maryland	23,837	17,464	6,373
Virginia	95,583	81,105	14,478
North Carolina	175,325	131,992	43,333
Tennessee	156,342	120,384	35,958
Arkansas	74,828	54,221	20,607
Louisiana	78,889	82,100	[1] 3.201

[1] Increase.

The decrease in illiteracy in North Carolina and Tennessee is almost incredible. Nothing short of a general educational awakening could have produced such results. On the surface the figures of this exhibit seem to promise universal literacy without attendance compelled by law. But let these figures be interpreted in the light of cold facts. Taking the total number of illiterates in these 12 States in 1910 as the basis, according to the actual decrease between 1900 and 1910, it would require 30 years for Maryland and Arkansas to banish white illiteracy from their borders with their present educational machinery and efforts. It would require 40 years for Georgia, Mississippi, and Tennessee. At the same rate for Virginia and Texas it would require 60 years, while South Carolina would have white illiteracy in her borders at the end of a century. Without some relief from her present condition, when can Louisiana hope to banish her white illiteracy?

But the interpretation is not finished. For every 1,000 persons 10 years of age and over classed as illiterates there are several hundred other persons who can mechanically scrawl their names in such way as to be legible and who can spell out sentences with difficulty. These persons are unable to write well enough for either business or social correspondence. Their ability to read is less than that necessary to get an intelligent meaning from an ordinary newspaper article. We get only a partial view of the situation when we see illiteracy as reported in the census tables. To the census tables must be added that army of near-illiterates who are without even the rudiments of an education and who are thus handicapped as creative forces in the State.

The opponents of compulsory attendance insist that the people will send their children to school without being compelled to do so, if only they are shown their duty and their obligation to their children. These opponents declare that the younger generation of white children are already in school. Neither contention is true. For 20 years the ablest and safest leaders, men and women whose names stand high in the Nation, have been tireless in their efforts to get the children into the schools without compulsion, yet approximately 25 per cent of the native white children between the ages of 6 and 14 are not in school at all. In 1910 the 12 Southern States under discussion had 788,699 native white children between the ages of 6 and 14 not in school. Here are the figures:

EXHIBIT G.—*Native white children between 6 and 14 years of age not in school.*

States.	Children.	Per cent.
Maryland	25,157	16.7
Virginia	74,506	26.8
North Carolina	79,261	24.3
Tennessee	97,071	24.8
Arkansas	60,231	25.3
Louisiana	58,197	31.6
South Carolina	39,977	27.9
Georgia	76,342	25.2
Florida	21,854	27.9
Alabama	78,142	30.0
Mississippi	26,730	15.8
Texas	151,232	25.7

In this exhibit no account is taken of the children of either foreign or mixed white parentage or the foreign-born whites. The figures are confined to the native white stock.

In some States one hears the perennial explanation of the relatively small per capita expenditure for schools—that the earning capacity of the people is small. Will the per capita earning capacity ever be what it might so long as thousands of wage earners are so fettered by ignorance as to be fitted for only the most ill-paid occupations? Intelligence and training are the means whereby men are transformed from menials into artisans at a living wage. Poverty and stress of war can no longer be offered as a palliative for the illiteracy of the children who ought to be in school.

Who are these illiterate white children and why are they not in school? Some of them are the sons and daughters of parents themselves ignorant and unable to appreciate or to understand what an education means to their children and to the State. Some are the children of sordid fathers and mothers who are more than willing to make wage earners and bread winners of their untaught offspring at the expense of their future manhood and womanhood. Many are at work on the farms, sacrificed to the monotonous round of planting crops, cultivating crops, harvesting crops, and again planting crops; some are at work in stores and shops or engaged as messenger boys, all at a small wage; many are employed in the nerve-dulling and blood-sapping environment of the mills, receiving good wages as children in exchange for vigor of body and training of mind as men and women, while thousands of others are roaming the streets and country lanes, the training grounds for idlers, vagrants, and enemies to law, order, and decency. Many of these children are the descendants of *The forgotten man,* so well portrayed by Ambassador Page in his "The Rebuilding of Old Commonwealths." They became the *neglected mass,* and the neglected mass has become the *indifferent mass.* When any considerable number of people in a State become indifferent to the intellectual, moral, and social conditions of themselves and their offspring, the situation becomes alarming, for illiteracy, like every other evil, tends to perpetuate itself. The illiterate parent and the near-illiterate citizen are usually content with short school terms, small and irregular attendance, ill-equipped and ill-paid teachers, inferior schoolhouses, rude furniture, and antiquated textbooks. The blighting blackness of ignorance obscures the light of knowledge and too often leaves the ignorant man wholly satisfied with his dismal lot. And one of the most unpromising features of this already gloomy prospect is that in many of the States the illiterate females outnumber the illiterate males. An illiterate mother does not promise much for the child of to-morrow.

Has the State the right to compel a parent to send his child to school? Many object to the word "compulsory." They are exceedingly anxious lest we should introduce into our government machinery something practiced by some ancient aristocracy or suggested by some modern monarchy. They fail to see that compulsory education is in its spirit and purpose both modern and democratic, in that it is destructive of all artificial class distinctions and aims to give all as nearly an even start in life as possible. Years ago we accepted without much serious question the doctrine that popular education is necessary to the growth and permanence of our republican institutions. Since all classes of our heterogeneous society are active factors therein, the State maintains schools for all the children of all the people in order to render its citizenship homogeneous in spirit and purpose. The public schools exist primarily for the benefit of the State rather than for the benefit of the individual. The State seeks to make every citizen intelligent and serviceable. The State compels the rich man to pay taxes to help support the schools, not because it owes the poor man's child an education, but because the State needs the intelligent services of that child. The schools are democratized by compelling the rich and poor alike to pay taxes according to their ability for something necessary to all.

When the State has provided schools for all its children, it has performed only a part of its duty. If a universal school tax is justifiable on the ground that popular education is a necessity, compulsory attendance by the State is also justifiable. The State has no right to levy and collect taxes for a specific purpose, then permit that purpose to be defeated at the hands of indifferent or selfish parents. For the State, under the mandates of law, to collect taxes for the education of its children and fail to give the education to the legal beneficiaries is a moral crime, if not a statutory one. In this connection one hears much about the sacred rights and personal privileges of the parent who neglects or refuses to send his child to school. Has the helpless child no sacred rights? Has the State not some privileges? The tendency to shift from the home those functions which properly belong there is regrettable. One of those functions is to train the children for their duties and responsibilities in the social organism. Society itself is imperiled whenever its members are unfit. One of the essentials of fitness is what we call education. Therefore, whenever the home refuses or neglects to prepare the child for society, it is not only the privilege but the duty of the State to see that the child is fitted for its part. Argument against the right of the State to send the child to school seems specious, superficial, and obsolete. Those who make such argument would not for one moment deny the right of the State to compel the parent to feed and clothe his child, to compel him to vaccinate his child, or to compel him to fight for his country and to shoot him if he should desert. No one questions the right of the State to carry the law-breaking child to the reformatory or to jail to protect society. Has not the State as much right to carry the child to the schoolhouse to save him from the reformatory or the jail, and to train him to benefit society?

When the State compels the parent to send his child to school, it is simply compelling the parent to put the child in possession of his own rightful inheritance. In a narrow sense that inheritance is his right to the benefit of what the State has collected and set apart for him; in a wider and truer sense it means his opportunity to make of himself all that his God-given abilities will permit him to become; in the broadest sense it is his becoming fitted to take his place in the State to perform the sacred duties of an intelligent and patriotic citizen.

Objection is often made that compulsory attendance would work hardships in the homes of the poor. Is it not a fact that the poor child is the very one who most needs the aid of the State to bring him into possession of his own? He it is who must soon face the complexities of modern life and the insistent demands of citizenship with none of the advantages common to birth or wealth. The poor child is the very one whom the State ought to help, because he himself is helpless. The child of the poor must work, but is it either right or humane that he should be forever denied his share of his inheritance in order to be a breadwinner for a selfish, unfeeling father? If it be true that the American home can not be supported by the adult members of the normal family, we are confronted with one of the gravest problems ever met in any country. No State on a sound economic and social basis can afford to permit its children to be employed as breadwinners when they should be in school equipping themselves for productive citizenship. Besides, it ought not to require much economic sagacity to understand that every child put into any gainful occupation contributes to the lowering of the wage or income of every adult in the same establishment. Child labor is ruinous to the wages of the parents.

Over and over we are assured that compulsory attendance laws could not be enforced, that such laws would be ignored or defied. That is begging the question. Why not the same skepticism about the enforcement of any other law? The opponents insist that a compulsory law could not be enforced, because the people are not ready for such a law. Would there be any use for this law or any other law, if all the people were ready and waiting to obey it? Laws are enacted to compel men to do that which they ought to do, but will not do voluntarily. Tens of thousands of people in America are not obeying the Ten Commandments. Are we to justify this disobedience on the ground that the people are not quite ready for the Decalog? Or, is the Decalog a piece of unwise and premature legislation, because some of us do not obey it? Will any law enforce itself? Will any law be enforced until an honest effort has been made to do so? And what is meant by successful enforcement? Can the enforcement of a law be called unsuccessful so long as it is violated by the few? In every civilized land there is a law against homicide. There are many violations of that law. Shall we for that reason call the law a failure and repeal it? To argue that a compulsory attendance law could not be enforced is to argue that we are not a law-abiding people.

It is further argued that a child forced to attend school would derive but little benefit from such attendance. Those who argue thus forget that the compulsion is not in bringing to the school the unwilling child, but in forcing an indifferent, mercenary, or recreant parent to let his child go to school. The average child between 8 and 14 years of age is willing enough to go to school, if he has even the opportunity.

Another contention is that compulsory laws could not be enforced without truant officers, and that such officer must be paid out of the school funds. No one denies the necessity for the truant officer and that he must be paid. Any city in the land would save thousands of dollars every year in the way of salaries, if it would dismiss its policemen, its constables, and its detectives. But these officers are necessary to perform for the people services more valuable than the sum of salaries. So it would be with the truant officers. We are perfectly willing to pay an officer of the law to arrest men for the most trivial offenses, but it is out of all reason to pay an officer of the law to see that a lazy, selfish, or thriftless father sends his child to school to give him an opportunity to improve on his father. The history of compulsory attendance laws has been that after a few months' operation the violations become fewer and fewer, the enforcement of the laws finally becoming nearly automatic.

Frequently the opponents insist that we have not enough schoolhouses and teachers to take care of the thousands of children whom a compulsory law would add to the school attendance. If this be true, the situation should be alarming to even the opponents. These opponents, were they farmers, would probably oppose any increase in the yield of their cornfields, because their corncribs would not hold the crop. Such argument is puerile, unless we are prepared to admit that the people are actually unable to take care of their own children. Will the schoolhouses ever be built or the teachers employed until there is need for them?

A few temporizing aspirants to leadership declare for compulsory education when pressed to take a stand, but add that the people are not quite ready for it. Who are the people not quite ready? Why are they not quite ready? When shall they be quite ready? Are they not the same people who were not quite ready for any kind of education at public expense, and were not quite ready to vote for water-supply systems, for electric-light plants, and for other public utilities? These people are not quite ready to do anything which they have not always done, and some of them would not be quite ready to vote for compulsory school attendance 20 years hence, even if their children were signing their names with cross marks. These temporizers must know that by compulsion alone we shall get all the children into the schools, yet they are hindering the day which they admit ought to come. They justify their course by saying that they are leading the people instead of driving them. These men ought to know that leaders must be men of large vision, strong conviction, and faith in themselves and their cause. They mistake timidity for discretion. Parents in the bonds of ignorance, blinded by indifference, greed, and stifling cupidity, are not easily lured into educating their children. Experience teaches that compulsion is necessary. Neither bonuses nor local-option laws will put all the children into the schools. The tale of those who have tried local option in this matter is one of pitiable failure, save as a mere preface to State-wide compulsion.

The argument against compulsory attendance on account of the negro has been worn threadbare; surely the time has come to drop it. Some phases of it are pathetic. Is it wise or expedient to permit thousands of white boys and girls to grow up in ignorance lest in forcing them into school the aspirations of the negro child should be awakened? Shall the white man remain ignorant in order to encourage or to compel the negro to remain ignorant? Is it better for white and black to remain ignorant than for both to become intelligent? The only logical conclusion to such argument is that the ignorant white man can compete successfully with the ignorant negro, but that the trained white man can not compete with the trained negro. Then what becomes of the boasted superiority of the white man? Has the white man so nearly reached the zenith of his possibilities that he can not keep well in advance of the ambitious negro?

The man who opposes compulsory attendance from a fear of putting the negro into school must be ill-informed as to the actual situation. The negro child needs no compulsory law to put him into school. He is already there wherever and whenever possible. No matter what a man's views on negro education, his admiration is challenged by the zeal and eagerness of the negro child to go to school. His thirst for knowledge would be commendable in any race. Not only is the negro in school, but he is learning. Let any skeptic examine the following figures:

Exhibit H.—*Negro illiterates 10 years of age and over.*

States.	1890	1900	1910
	Per ct.	*Per ct.*	*Per ct.*
Maryland	50.1	35.1	23.4
Virginia	57.2	44.6	30.0
North Carolina	60.1	47.6	33.9
Tennessee	54.2	41.6	27.3
Arkansas	53.6	43.0	26.4
Louisiana	72.1	61.1	48.4
South Carolina	64.1	52.8	38.7
Georgia	67.3	52.4	36.5
Florida	50.6	38.4	25.5
Alabama	69.1	57.4	40.1
Mississippi	60.9	49.1	35.6
Texas	52.5	38.2	24.6

There are many who contend that our educational conditions are matters for congratulation. The writer yields to no one in the matter of pride over what has been accomplished educationally in the past 40 years. It is a source of constant delight to see and to hear of so many tangible evidences of educational progress. For several decades the various organizations of educational workers have been coming together annually to discuss means for the betterment of the schools. They have brought together regularly much of the best thought and ripest experience of the Nation, and have laid just tribute upon foreign countries in their conferences. It is no empty boast to say that these organizations have wrought wonderfully in constructive educational statesmanship. In addition to all these, Congressmen, governors, legislators, publicists, philanthropists, business men, and taxpayers have frequently come together to consider the means for educational advancement.

In all these gatherings we have planned better schools, inspired the taxpayers to vote taxes for schools, encouraged the people to build model schoolhouses, to lengthen their school terms, to employ better teachers and to pay them better salaries, and to make their schools their pride. But what has been accomplished in the way of a substantial decrease in the illiteracy of the citizenship? In these larger gatherings one State reports that it has put its university at the head as to entrance requirements; another State reports that it has doubled its school revenues within very recent years; another reports that it has doubled its secondary-school attendance within a very short time; another boasts that it has marvelously increased its common-school enrollment within the past 10 years, but overlooks the fact that its natural decennial increase in population also has been marvelous; still another State boasts that it has built a new schoolhouse every week day in the year and two on Sundays. All these reports are inspiring, but how many have had the courage or the cause to boast of any permanent, substantial decrease in the illiteracy of their people? Of what value are all our school taxes, our elegant schoolhouses, our improved schools to the thousands of boys and girls who never enter the door of a schoolhouse?

V. LAWS OF OHIO AND OF MASSACHUSETTS RELATING TO COMPULSORY EDUCATION AND CHILD LABOR.

OHIO.[1]

AN ACT * * * relating to children and to females under 21 years of age and to organizations which include within their objects matters relating to children.

(Approved May 9, 1913.)

Be it enacted by the General Assembly of the State of Ohio:

COMPULSORY EDUCATION.

Sec. 7763. Every parent, guardian, or other person having charge of any child between the ages of 8 and 15 years of age, if a male, and 16 years of age if a female, must send such child to a public, private, or parochial school, for the full time that the school attended is in session, which shall in no case be for less than 28 weeks. Such attendance must begin within the first week of the school term, unless the child is excused therefrom by the superintendent of the public schools, in city or other districts having such superintendent, or by the clerk of the board of education in village, special, and township districts not having a superintendent, or by the principal of the private or parochial school, upon satisfactory showing, either that the bodily or mental condition of the child does not permit of its attendance at school, or that the child is being instructed at home by a person qualified, in the opinion of such superintendent or clerk, as the case may be, to teach the branches named in the next preceding section.

Sec. 7764. In case such superintendent, principal, or clerk refuses to excuse a child from attendance at school, an appeal may be taken from such decision to the judge of the juvenile court of the county, upon the giving of a bond, within 10 days thereafter, to the approval of such judge, to pay the costs of the appeal. His decision in the matter shall be final. All children between the ages of 15 and 16 years, not engaged in some regular employment, shall attend school for the full term the schools of the district in which they reside are in session during the school year, unless excused for the reasons above named.

Sec. 7765. No boy under 16 years of age and no girl under 18 years of age shall be employed or be in the employment of any person, company, or corporation unless such child presents to such person, company, or corporation an age and school certificate herein provided for, as a condition of employment. Such employer shall keep the same on file in the establishment where such minor is employed for inspection by the truant officer or officers of the department of workshops and factories.

Sec. 7766. An age and schooling certificate shall be approved only by the superintendent of schools, or by a person authorized by him, in city or other districts having such superintendent, or by the clerk of the board of education in village, special, and township districts not having such superintendent, upon satisfactory proof that such child, if a male, is over 15 years of age or, if a female, is over 16 years of age, and that such child has been examined and passed a satisfactory sixth-grade test, if a male, and seventh-grade test if a female, in the studies enumerated in section 7762: *Provided*, That residents of other States who work in Ohio must qualify as aforesaid with the proper school authority in the school district in which the establishment is located, as a condition of employment or service, and that the employment contemplated by the child is not prohibited by any law regulating the employment of such children. Every such age and schooling certificate shall be signed in the presence of the officer issuing the same by the child in whose name it is issued.

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[1] Ohio Session Laws, 1913, pp. 864, et seq.

In order to ascertain whether applicants for such certificates have satisfactorily completed the studies herein prescribed as a condition for the issuance of said certificates, the board of education of each city school district may appoint a juvenile examiner who shall receive such compensation as may be fixed by the board of education. No such child residing in a city shall be granted such certificate unless such juvenile examiner shall have previously certified that he has examined such child and that he has passed to his satisfaction the grade test as provided by this section: *Provided, further*, That if a child in the opinion of said juvenile examiner is below the normal in mental development so that he can not with due industry pass such test, and if the school record shows that such child is below the normal in development, such fact may be certified to by said examiner, and the superintendent or person authorized by him may at his discretion grant such child such age and schooling certificate: *Provided*, That if said examiner is satisfied that the standard of any school is sufficiently high, he may accept the records thereof as showing that such child has passed such test without further examination.

The age and schooling certificate must be formulated by the State commissioner of common schools, and furnished in blank by the clerk of the board of education. It shall show the date of its issue. A record giving all the facts contained on every certificate issued shall be kept on file in the office issuing the same, and also a record of the names and addresses of the children to whom certificates have been refused, together with the names of the schools which such children should attend and the reasons for refusal.

The superintendent of schools or other persons authorized to issue employment certificates shall transmit between the first and tenth days of each month to the office of the chief inspector of workshops and factories, upon blanks to be furnished by him, a list of the names of the children to whom certificates have been issued, returned, or refused. Such lists shall give the name and address of the prospective employer and the nature of the occupation the child intends to engage in.

Any child between 15 and 16 years of age who shall cease to work for any cause whatever shall report the fact and cause at once to the superintendent of schools, or to a person authorized by him in city or other districts having such superintendent, or to the clerk of the board of education in village, township, or special districts not having such superintendent; said child shall be required to return to school within two weeks, provided other employment is not secured within such time: *Provided*, That should a child in the opinion of the superintendent or person authorized by him in cities and districts having such superintendent, or the clerk of the board of education in village, township, or special districts, lose his employment by reason of persistent willful misconduct or continuous inconstancy, he may be placed in school until the close of the current school year.

The superintendent of schools or the person authorized by him to issue age and schooling certificates shall not issue such certificates until he has received, examined, approved, and filed the following papers duly executed:

(1) The written pledge or promise of the person, partnership, or corporation to legally employ the child, also the written agreement to return to the superintendent of schools or to the person authorized by him to issue such certificates, the age and schooling certificate of the child within two days from the date of the child's

withdrawal or dismissal from the service of the person, partnership, or corporation, giving the reason for such withdrawal or dismissal.

(2) The school record of such child, properly filled out and signed by the principal or other person in charge of the school which such child last attended, giving the name, age, address, standing in studies enumerated in section 7762, and the number of weeks attendance in school during the school year previous to applying for such school record, and general conduct.

(3) As evidence of age (a) a passport or duly attested transcript of a passport, filed with a registrar of passports or other officer charged with the duty of registering passports at the several ports of entry to the United States; or duly attested transcript of the certificate of birth or baptism or other religious record, showing the date and place of birth of such child; or (b) a duly attested transcript of the birth certificate, filed according to law with a registrar of vital statistics, or other officer charged with the duty of recording births, shall be conclusive evidence of the age of the child. (c) In case none of the above proofs of age can be produced, other documentary evidence of age which shall appear to be satisfactory to the officer issuing the certificate (aside from the school record of such child or the affidavit of parent, guardian, or custodian), may be accepted in lieu thereof. In such case a school census or enumeration record, duly attested, may be used as proof of age in the discretion of the officer issuing the certificate. (d) In case no documentary proof of age of any kind can be produced, the officer issuing the certificate may receive and file an application signed by the parent, guardian, or custodian of the child for a physician's certificate. Such application shall contain the name, alleged age, place, and date of birth, and present residence of the child, together with such further facts as may be of assistance in determining the age of such child, and shall contain a statement certifying that the parent, guardian, or custodian signing such application is unable to produce any of the documentary proofs of age specified in the preceding subdivisions of this section. If the superintendent, or officer authorized by him to issue such certificate, is satisfied that a reasonable effort to procure such documentary proof has been made, the certificate of the school physician, or, if there be none, of a physician employed for the purpose by the board of education that such physician has made a physical examination of such child and is satisfied that he is more than 15 years of age, if a male, or that she is more than 16 years of age, if a female, shall be accepted as sufficient proof of the age of such child for the purpose of this act.

(4) A certificate from the school physician, or if there should be none, of the board of health, and if there be no board of health within the school district in question, from a licensed physician appointed by the board of education, showing that the child is physically fit to be employed in any of the occupations permitted by law for a child between 15 and 16 years of age: *Provided*, That if the records of the school physician show such child to have been previously sound in health, no further physician's certificate need be required, but the officer authorized to issue such certificate may at his discretion require such physician's certificate in any case, as a condition to the issuing of an age and schooling certificate.

The superintendent or person authorized by him may issue special vacation certificates to boys under 16 years of age and girls under 18 years of age, which shall entitle the holders thereof to be employed during vacation in occupations not forbidden by law to such children, even though such child may not have completed the sixth grade, but provided he has complied with all the other requirements for obtaining the certificate hereinbefore described.

SEC. 7767. All minors over the age of 15 and under the age of 16 years, who have not passed a satisfactory sixth-grade test in the studies enumerated in section 7762, shall attend school as provided in section 7763, and all the provisions thereof shall apply to such minors.

In case the board of education of any school district establishes part-time day schools for the instruction of youth over 15 years of age who are engaged in regular employment, such board of education is authorized to require all youth who have not satisfactorily completed the eighth grade of the elementary schools to continue their schooling until they are 16 years of age: *Provided, however*, That such youth, if they have been granted age and schooling certificates and are regularly employed, shall be required to attend school not to exceed eight hours a week, between the hours of 8 a. m. and 5 p. m. during the school term. All youth between 15 and 16 years of age, who are not employed, shall be required to attend school the full time.

SEC. 7768. Every child between the ages of 8 and 15 years, if a male, or between the ages of 8 and 16, if a female, and every male child between the ages of 15 and 16 years not engaged in some regular employment, who is an habitual truant from school, or who absents itself habitually from school, or who, while in attendance at any public, private, or parochial school, is incorrigible, vicious, or immoral in conduct, or who habitually wanders about the streets and public places during school hours, having no business or lawful occupation, or violates any of the provisions of this act, shall be deemed a delinquent child, and shall be subject to the provisions of law relating to delinquent children.

SEC. 7770. The truant officer and assistants shall be vested with police powers, and the authority to serve warrants, and have authority to enter workshops, factories, stores, and all other places where children are employed, and do whatever may be necessary, in the way of investigation or otherwise, to enforce this act. He also may take into custody any youth between 8 and 15 years of age, or between 15 and 16 years of age, when not regularly employed, who is not attending school, and shall conduct such youth to the school he has been attending, or which he rightfully should attend.

SEC. 7771. The truant officer shall institute proceedings against any officer, parent, guardian, person, partnership, or corporation violating any provisions of this chapter, and otherwise discharge the duties described therein, and perform such other services as the superintendent of schools or the board of education may deem necessary to preserve the morals and secure the good conduct of school children, and to enforce the provisions of this chapter. The truant officer shall keep on file the name, address, and record of all children between the ages of 15 and 16 to whom age and schooling certificates have been granted who desire employment, and manufacturers, employers, or other persons requiring help of legal age shall have access to such files. The truant officer shall cooperate with the department of workshops and factories in enforcing the conditions and requirements of the child-labor laws of Ohio, furnishing upon request such data as he has collected in his reports of children from 8 to 16 years of age and also concerning employers, to the department of workshops and factories and to the State commissioner of schools. He must keep a record of his transactions for the inspection and information of the superintendent of schools and the board of education; and make daily reports to the superintendent during the school term in districts having them, and to the clerk of the board of education in districts not having superintendents as often as required by him. Suitable blanks for the use of the truant officer shall be provided by the clerk of the board of education.

SEC. 7773. On the request of the superintendent of schools or the board of education or when it otherwise comes to his notice, the truant officer shall examine into any case of truancy within his district, and warn the truant and his parents, guardian, or other person in charge, in writing, of the final consequences of truancy if persisted in. When any child between the ages of 8 and 15 years, or between the ages of 15 and 16 years, in violation of the provisions of this chapter is not regularly employed and is not attending school, the truant officer shall notify the parent, guardian, or other person in charge of such child, of the fact, and require such parent, guardian, or other person in charge, to cause the child to attend some recognized school within two days from the date of the notice; and it shall be the duty of the parent, guardian, or other person in charge of the child so to cause its attendance at some recognized school. Upon failure to do so, the truant officer shall make complaint against the parent, guardian, or other person in charge of the child, in any court of competent jurisdiction in the city, special village, or township district in which the offense occurred for such failure.

Sec. 7774. If the parent, guardian, or other person in charge of any child, upon complaint for a failure to cause the child to attend a recognized school, proves inability to do so, then he or she must be discharged and thereupon the truant officer shall make complaint that the child is a juvenile disorderly person within the meaning of section 7768. If such complaint be made before a mayor, justice of the peace, or police judge, it must be certified by such magistrate to the judge of the juvenile court, who shall hear the complaint, and if he determines that the child is a juvenile disorderly person within the meaning of such section, and if under 10 years of age, and eligible for admission thereto, he shall commit the child to a children's home, or, if not eligible, then to a house of refuge, if there be one in the county, or otherwise committed as provided by law.

Sec. 7779. Annually between the 1st day of July and the 1st day of August, truant officers must report to the judge of the juvenile court of their respective counties the names, ages, and residences of all such children between the ages of 8 and 18 years, with the names and post-office address of their parents, guardians, or the person in charge of them; also a statement whether the parents, guardians, or persons in charge of each child are able to educate and are educating the child, or whether the interests of the child will be promoted by sending it to one of the State institutions mentioned.

Sec. 7780. Upon information thus or otherwise obtained, the judge of the juvenile court may fix a time when he will hear the question whether any such child shall be required to be sent for instruction to one of the State institutions mentioned, and thereupon issue a warrant to the proper truant officer or some other suitable person, to bring the child before him, at his office at the time fixed for the hearing. He also shall issue an order on the parents, guardian, or person in charge of the child to appear before him at such hearing, a copy of which order, in writing, must be served personally on the proper person by the truant officer or other person ordered to bring the child before the judge. If, on the hearing, the judge of the juvenile court is satisfied that the child is not being properly educated at home, and will be benefited by attendance at one of the State institutions mentioned, and is a suitable person to receive instructions therein, he may send or commit such child as provided by law.

Sec. 7782. In every case of complaint against a child, involving commitment to a children's home or juvenile reformatory, the board of county visitors may be notified, and if so notified it must attend and protect the interest of the child on the hearing, as provided by law in regard to the commitment to an industrial or reform school. The order of commitment of the child to a State reformatory may show that the county visitors were so notified and attended the hearing.

OFFENSES AGAINST MINORS AND FEMALES BETWEEN 18 AND 21 YEARS.

Sec. 12957. Whoever, being a minor, enters a saloon, beer garden, or other place where intoxicating liquor is sold or offered for sale except when accompanied by a parent or guardian, shall be fined not less than $1 nor more than $5, and for each subsequent offense shall be fined not less than $5 nor more than $25 or imprisoned not more than 10 days or both.

Sec. 12964. Whoever entices a minor to engage in a game for money or other valuable thing, or makes a wager with a minor upon the result of a game, or permits a minor to play a slot machine or other gambling device for wares or merchandise or any other thing of value, shall be fined not less than $50 nor more than $100, or imprisoned not less than three months nor more than one year.

Sec. 12966. Whoever sells or exhibits for sale, to a minor under 16 years of age, a pistol manufactured of a metallic or hard substance, commonly known as a "toy pistol" or air gun, or any form of explosive gun, shall be fined not less than $10 nor more than $50, or imprisoned not less than 10 days nor more than 20 days, or both, and be liable in damages to any person injured by such sale.

Sec. 12967. Whoever sells, barters, furnishes, or gives to a minor under the age of 17 years, an air gun, musket, rifle, shotgun, revolver, pistol, or other firearm, or ammunition therefor, or, being the owner or having charge or control thereof, knowingly permits it to be used by a minor under such age, shall be fined not more than $100 or imprisoned in jail not more than 30 days, or both.

Sec. 12968. Whoever takes, receives, hires, employs, uses, exhibits, sells, apprentices, gives away, lets out, or otherwise disposes of a child, under the age of 14 years for or in the vocation, occupation, service, or purpose of singing, playing on musical instruments, rope or wire walking, dancing, taking any part in, or appearing in connection with a moving picture exhibition or performance given in a theater or place of public amusement, begging or peddling, or as a gymnast, contortionist, rider, or acrobat, or for an obscene, indecent, or immoral purpose, exhibition, or practice, or for or in a business exhibition or vocation injurious to the health or dangerous to the life or limb of such child, or causes, procures, or encourages such child to engage therein, or causes or permits such child to suffer or inflicts upon it injustifiable physical pain or mental suffering, or has such child in custody for any of such purposes, shall be fined not more than $200 or imprisoned not more than six months, or both.

Sec. 12970-1. When such person is convicted, sentenced, and confined in a workhouse, the county from which he is so convicted, sentenced, and confined, upon the warrant of the county auditor of such county, and out of the general revenue fund thereof, shall pay monthly 50 cents for each day he is so confined, to a trustee to be appointed by the court imposing such sentence, to be expended for the maintenance of such child or children under 16 years of age.

EMPLOYING MINORS AND FEMALES BETWEEN 18 AND 21 IN FACTORY, ETC.

Sec. 12993. No male child under 15 years or female child under 16 years of age shall be employed, permitted, or suffered to work in, about, or in connection with any (1) mill, (2) factory, (3) workshop, (4) mercantile or mechanical establishments, (5) tenement house, manufactory or workshop, (6) store, (7) office, (8) office building, (9) restaurant, (10) boarding house, (11) bakery, (12) barber shop, (13) hotel, (14) apartment house, (15) bootblack stand or establishment, (16) public stable, (17) garage, (18) laundry, (19) place of amusement, (20) club, (21) or as a driver, (22) or in any brick or lumber yard, (23) or in the construction or repair of buildings, (24) or in the distribution, transmission, or sale of merchandise, (25) nor any boy under 15 or female under 21 years in the transmission of messages.

It shall be unlawful for any person, firm, or corporation to employ, permit, or suffer to work any child under 15 years of age in any business whatever during any of the hours when the public schools of the district in which the child resides are in session.

Sec. 12994. No boy under 16 years of age and no girl under 18 years of age shall be employed or permitted to work on or in connection with the establishments mentioned in section 12993 of the General Code, or in the distribution or transmission of merchandise or messages unless such employer first procures from the proper authority the age and schooling certificate provided by law.

Sec. 12995. The certificate mentioned in the section 12994 shall be filed in the office of such establishment and shall be produced for inspection upon request therefor by the chief or district inspector of workshops and factories or a truant officer and shall be returned forthwith to the superintendent of schools or other persons legally issuing it, by the person in charge or manager of such establishment upon the termination of the employment of such minor. Upon failure on the part of the employer so to return said certificate within two days, the child terminating his employment shall be entitled to recover from such employer in a civil action as damages an amount equal to the wages which he would have earned had he continued in said employment for the period between such termination thereof and the time when such certificate is so returned. If such child at any time fails to appear for work without explanation, the employment shall be deemed within the purposes of this section to have terminated upon the expiration of two days after his so failing to appear.

SEC. 12996. No boy under the age of 16 and no girl under the age of 18 years shall be employed, permitted, or suffered to work in, about, or in connection with any establishment or occupation named in section 12993 (1) for more than six days in any one week, (2) nor more than 48 hours in any week, (3) nor more than eight hours in any one day, (4) or before the hours of 7 o'clock in the morning or after the hour of 6 o'clock in the evening. The presence of such child in any establishment during working hours shall be prima facie evidence of its employment therein. No boy under the age of 18 years or girl under the age of 21 years shall be employed, permitted, or suffered to work in, about, or in connection with any establishment or occupation named in section 12993 (1) for more than six days in any one week, (2) nor more than 54 hours in any week, (3) nor more than 10 hours in any one day, (4) or before the hour of 6 o'clock in the morning or after the hour of 10 o'clock in the evening. In estimating such periods, the time spent at different employments or under different employers shall be considered as a whole and not separately.

SEC. 12996-1. No person having charge or management of a telephone, telegraph, or messenger office or company shall employ a boy under the age of 18 years to work as a messenger in connection with such office or company before the hour of 6 o'clock in the morning or after the hour of 9 o'clock in the evening of any day.

SEC. 12997. A boy or girl employed as provided in section 12996-1, shall be entitled to not less than 30 consecutive minutes for meal time within five hours from the time of beginning work which shall not be included as a part of the work hours of the day or week.

SEC. 12998. No child under 16 years of age shall be employed, permitted, or suffered to work in, about, or in connection with any establishment or occupation named in section 12993 unless the person, firm, or corporation employing such child keeps two complete lists of names together with the ages of all boys under 16 years of age and all girls under 18 years of age employed in or for such establishment or in such occupation, one on file and one conspicuously posted near the principal entrance of the place or establishment in which such children are employed.

Every employer shall post and keep posted in a conspicuous place in every room where any boy under the age of 18, or any girl under the age of 21 is employed, permitted, or suffered to work, a printed notice stating the maximum number of hours such person may be required or permitted to work on each day of the week, the hours of commencing and stopping work, and the hours allowed for dinner or for meals. The printed form of such notices shall be furnished by the chief inspector of workshops and factories and the employment of any minor for a longer time in any day than so stated, or at any time other than as stated in said printed notice shall be deemed a violation of the provisions of this act.

SEC. 12999. The notice provided in section 12998 shall be formulated by the chief inspector of workshops and factories, approved by the attorney general, and furnished by such inspector upon application therefor.

SEC. 13001. No child under the age of 16 years shall be employed, permitted, or suffered to work at any of the following occupations or any of the following positions: (1) Adjusting any belt to any machinery; (2) sewing or lacing machine belts in any workshop or factory; (3) oiling, wiping, or cleaning machinery or assisting therein; (4) operating or assisting in operating any of the following machines: (a) circular or band saws; (b) wood shapers; (c) wood jointers; (d) planers; (e) sandpaper or wood-polishing machinery; (f) woodturning or boring machinery; (g) picker machines or machines used in picking wool, cotton, hair, or any other material; (h) carding machines; (i) paper-lace machines; (j) leather-burnishing machines; (k) job or cylinder printing presses operated by power other than foot power; (l) boring or drill presses; (m) stamping machines used in sheet-metal and tinware, or in paper and leather manufacturing, or in washer and nut factories; (n) metal or paper cutting machines; (o) corner-staying machines in paper-box factories; (p) corrugating rolls, such as are used in corrugated paper, roofing, or washboard factories; (q) steam boilers; (r) dough brakes or cracker machinery of any description; (s) wire or iron straightening or drawing machinery; (t) rolling-mill machinery; (u) power punches or shears; (v) washing, grinding, or mixing machinery; (w) calendar rolls in paper and rubber manufacturing; (x) laundering machines; (y) burring machinery; (5) or in proximity to any hazardous or unguarded belts, machinery, or gearing; (6) or upon any railroad, whether steam, electric, or hydraulic; (7) or upon any vessel or boat engaged in navigation or commerce within the jurisdiction of this State.

SEC. 13002. No child under the age of 16 years shall be employed, permitted, or suffered to work in any capacity (1) in, about, or in connection with any processes in which dangerous or poisonous acids are used; (2) nor in the manufacture or packing of paints, colors, white or red lead; (3) nor in soldering; (4) nor in occupations causing dust in injurious quantities; (5) nor in the manufacture or use of dangerous or poisonous dyes; (6) nor in the manufacture or preparation of compositions with dangerous or poisonous gases; (7) nor in the manufacture or use of compositions of lye in which the quantity thereof is injurious to health; (8) nor on scaffolding; (9) nor in heavy work in the building trades; (10) nor in any tunnel excavation; (11) nor in, about, or in connection with any mine, coal breaker, coke oven, or quarry; (12) nor in assorting, manufacturing, or packing tobacco; (13) nor in operating any automobile, motor car, or truck; (14) nor in a bowling alley; (15) nor in a pool or billiard room; (16) nor in any other occupation dangerous to the life and limb, or injurious to the health or morals of such child.

SEC. 13003. The State board of health may, from time to time, after a hearing duly had, determine whether or not any particular trade, process of manufacture, or occupation in which the employment of children under the age of 16 years is not already forbidden by law, or any particular method of carrying on such trade, process of manufacture, or occupation, is sufficiently dangerous to the lives or limbs or injurious to the health or morals of children under 16 years of age to justify their exclusion therefrom. No child under 16 years of age shall be employed, permitted, or suffered to work in any occupation thus determined to be dangerous or injurious to such children. There shall be a right of appeal to the common pleas court from any such determination.

SEC. 13005. No female under the age of 21 years shall be engaged or permitted to work at any employment which compels her to remain standing constantly while on duty.

SEC. 13006. No female visitor, truant officer, factory inspector, or other officer thereunto authorized by this chapter shall be prevented, as provided by law, from entering, at any time, a shop, factory, or mercantile establishment for the purpose of making a lawful inspection thereof.

SEC. 13007-1. An inspector of factories, truant officer, or other officer charged with the enforcement of this act may make demand on any employer in or about whose place or establishment a child apparently under the age of 16 years is employed or permitted or suffered to work, and whose employment certificate is not filed as required by this act, that such employer shall furnish him, within 10 days, satisfactory evidence that such child is in fact over 16 years of age. The inspector of factories, truant officer, or other officer charged with the enforcement of this act, shall require from such employer the same evidence of age of such child as is required upon the issuance of an employment certificate, and the employer furnishing such evidence shall not be required to furnish any further evidence of the age of the child: *Provided*, That nothing herein contained shall be construed as permitting any of the acts prohibited by other sections of this chapter or as in any way exempting such employer from prosecution under other sections of this chapter.

SEC. 13007-2. In case any employer shall fail to produce and deliver to a factory inspector, truant officer, or other officer charged with the enforcement of this act, within 10 days after demand made pursuant to section 13007-1 of this act, the evidence of age therein required, proof of the making of such demand and of such failure to produce and file such evidence shall be prima facie evidence of the illegal employment of such child in any prosecution brought therefor.

SEC. 13007-3. No child under the age of 18 years shall be employed, permitted, or suffered to work (1) in or about or in connection with blast furnaces, docks, or wharves; (2) in the outside erection or repair of electric wires; (3) in the running or management of elevators, lifts, or hoisting machines or dynamos; (4) in oiling or cleaning machinery in motion; (5) in the operation of emery wheels or any abrasive, polishing, or buffing wheel where articles of the baser metals or iridium are manufactured; (6) at switch tending; (7) gate tending; (8) track repairing; (9) or as brakeman, fireman, engineers, motormen, or conductors upon railroads; (10) or as railroad telegraph operators; (11) as pilots, firemen, or engineers upon boats and vessels; (12) or in or about establishments wherein nitroglycerin, dynamite, dualin, guncotton, gunpowder, or other high or dangerous explosives are manufactured, compounded, or stored; (13) or in the manufacture of white or yellow phosphorus or phosphorous matches; (14) or in any distillery, brewery, or any other establishment where malt or alcoholic liquors are manufactured, packed, wrapped, or bottled; (15) or in any hotel, theater, concert hall, place of amusement, or any other establishment where intoxicating liquors are sold; (16) nor any boy under 16 or girl under 18 in any theater or other place of amusement, except on the stage thereof when not otherwise prohibited by law.

SEC. 13007-4. The State board of health may, from time to time, after hearing duly had, determine whether or not any particular trade, process of manufacture, or occupation, in which the employment of children under 18 years of age is not already forbidden by law, or any particular method of carrying on such trade, process of manufacture, or occupation is sufficiently dangerous to the lives or limbs or injurious to the health or morals of children under 18 years of age to justify their exclusion therefrom.

No child under 18 years of age shall be employed, permitted, or suffered to work in any occupation thus determined to be dangerous or injurious to such children. There shall be a right of appeal to the common pleas court from any such determination.

SEC. 13007-5. No person under 21 years of age shall be employed, permitted, or suffered to work in, about, or in connection with any saloon or barroom where intoxicating liquors are sold or to handle intoxicating liquors in any way.

SEC. 13007-6. No female under 21 years of age shall be employed, permitted, or suffered to work in or about any (1) mine, (2) quarry, (3) or coal breaker, except in the office thereof, (4) or in oiling or cleaning machinery while in motion.

SEC. 13007-7. It shall be the duty of factory inspectors, truant officers, and other officers charged with the enforcement of laws relating to the employment of minors to make complaints against any person violating any of the provisions of this act and to prosecute the same.

This shall not be construed as a limitation upon the right of other persons to make and prosecute such complaints.

SEC. 13007-8. Any person who with the intent to assist a minor to procure employment knowingly makes a false statement regarding the age of such minor either to an employer of labor or to an officer authorized to issue age and schooling certificates as provided by law, shall be fined not less than $25 nor more than $50.

SEC. 13007-9. Any person, firm, or corporation, agent or manager of any firm or corporation, who, whether for himself or for such firm or corporation, or by himself, or through agents, servants, or foreman, employs any child or girl under the age of 21, and whoever having under his control as parent, guardian, custodian, or otherwise any child permits or suffers such child or girl to be employed or to work in violation of any of the provisions of this chapter shall, for a first offense, be punished by a fine of not less than $5 nor more than $50; for a second offense by a fine of not less than $50 nor more than $200, or by imprisonment for not more than 30 days or by both such fine and imprisonment; for a third offense by a fine of not less than $200, or by imprisonment for not more than 60 days, or by both such fine and imprisonment.

SEC. 13007-10. Whoever continues to employ any child or girl under 21 in violation of any of the provisions of this chapter, after being notified thereof in writing by a factory inspector, truant officer, or other officer charged with the enforcement of this act, shall, for every day thereafter that such employment continues, be fined not less than $5 nor more than $20.

SEC. 13007-11. Every employer who fails to procure and keep on file employment certificates for all children employed under the age of 16 years, or to return the same as provided by section 12995 of the General Code, or who fails to keep and post lists or the notice, as provided in section 12998 of the General Code, shall be fined not less than $25 nor more than $100.

SEC. 13007-12. Any person, firm, or corporation who (1) hinders or delays any factory inspector, truant officer, or any other officer charged with the enforcement of any of the provisions of this act in the performance of his or her duties (2) or refuses to admit or locks out any such officer from any place which said inspectors or officers are authorized to inspect, shall be punished by a fine of not less than $25 nor more than $200, or by imprisonment for not less than 10 days nor more than 30 days, or by both such fine and imprisonment.

SEC. 13007-13. Any person authorized to sign any certificate, affidavit, or paper called for by this act, who knowingly certifies to any materially false statement therein, shall be fined not less than $25 nor more than $100.

SEC. 13007-14. Any child working in or in connection with any of the establishments or places or in any of the occupations mentioned in this chapter, who refuses to give to the inspector of workshops and factories or other authorized inspector or truant officer his or her name, age, and place of residence shall be forthwith conducted by the inspector, truant officer, or other officer before the juvenile court or other court having jurisdiction in the premises for examination and to be dealt with according to law.

SEC. 13018. When a person is convicted, sentenced, and fined under any provision of this subdivision of this chapter, in a workhouse, the county from which he is so convicted, sentenced, and confined upon the warrant of the county auditor of such county, and out of the general revenue fund thereof, shall pay monthly 50 cents for each day he is so confined to the trustee appointed by the court under any of such provisions, to be expended by such trustees for the maintenance of the child or children under 16 years of age, of such person as provided in such provisions.

SEC. 3. This act shall take effect in the manner provided in section 1c of Article II of the constitution of the State of Ohio, except that the amendments of section 1652 and 2084 shall not take effect until the 1st day of July, 1914.

MASSACHUSETTS.

[Revised Laws, Chapter 44, as Amended.]

SCHOOL ATTENDANCE.

ATTENDANCE COMPULSORY BETWEEN 7 AND 14 YEARS OF AGE AND UNDER 16 IN CERTAIN CASES.

SECTION 1. Every child between 7 and 14 years of age and every child under 16 years of age who can not read at sight and write legibly simple sentences in the English language shall attend some public day school in the city or town in which he resides during the entire time the public day schools are in session, subject to such exceptions as to children, places of attendance, and schools as are provided for in section 3 of chapter 42 and sections 3, 5, and 6 of this chapter. The superintendent of schools, or if there is no superintendent of schools, the school committee, or teachers acting under authority of said superintendent or committee, may excuse cases of necessary absence. The attendance of a child upon a public day school shall not be required if he has attended for a like period of time a private day school approved by the school committee of such city or town in accordance with the provisions of the following section, or if he has been otherwise instructed for a like period of time in the branches of learning required by law to be taught in the public schools, or if he has already acquired such branches of learning, or if his physical or mental condition is such as to render such attendance inexpedient or impracticable. Every person having under his control a child as described in this section, shall cause him to attend school as herein required, and if he fails for 5 day sessions or 10 half-day sessions within any period of six months while under such control to cause such child, whose physical or metnal condition is not such as to render his attendance at school harmful or impracticable, so to attend school, he shall, upon complaint by a truant officer and conviction thereof, be punished by a fine of not more than $20: *Provided, however*, That no physical or mental condition which is capable of correction, or which renders the child a fit subject for special instruction at public charge in institutions other than the public day schools, shall avail as a defense under the provisions of this section unless it shall be made to appear that the defendant has employed all reasonable measures for the correction of the condition or the suitable instruction of the child. Whoever induces or attempts to induce a child to absent himself unlawfully from school, or employs or harbors a child who, while school is in session, is absent unlawfully from school shall be punished by a fine of not more than $50.

WHEN PRIVATE SCHOOLS MAY BE APPROVED.

SEC. 2. For the purposes of the preceding section school committees shall approve a private school only when the instruction in all the studies required by law is in the English language, and when they are satisfied that such instruction equals in thoroughness and efficiency and in the progress made therein the instruction in the public schools in the same city or town; but they shall not refuse to approve a private school on account of the religious teaching therein.

[Revised Laws, Chapter 46.]

TRUANTS AND TRUANT SCHOOLS.

COUNTY TRUANT SCHOOLS.[1]

SECTION 1. The county commissioners of each county, except the counties of Barnstable, Berkshire, Franklin, Hampshire, Dukes, and Nantucket, shall maintain either separately or jointly with the commissioners of other counties as hereinafter provided, in a suitable place, not at or near a penal institution, a truant school for the instruction and training of children committed thereto as habitual truants, absentees, or school offenders. The county commissioners of two or more counties may, at the expense of said counties, establish and maintain a union truant school which shall be organized and controlled by the chairmen of the county commissioners of said counties. The chairmen of the respective boards of county commissioners of the counties of Norfolk, Bristol, and Plymouth, having the management of the Norfolk, Bristol, and Plymouth union truant school, shall each be paid the sum of $100 annually by said counties, respectively. The county commissioners of the counties of Barnstable, Berkshire, Franklin, Hampshire, Dukes, and Nantucket shall assign a truant school established by law as the place for the instruction and training of children committed within their respective counties as habitual truants, absentees, or school offenders, and shall pay for their support in said school such reasonable sum as the county commissioners having control of said school may determine. For the purposes of this chapter the parental school of the city of Boston shall be deemed the county truant school of the county of Suffolk, and commitments from the towns of Revere and Winthrop and the city of Chelsea shall be to the truant school for the county of Middlesex. The city or town from which an habitual truant, absentee, or school offender is committed to a county truant school shall pay to the county within which it is located $1 a week toward his support; but the towns of Revere and Winthrop and the city of Chelsea shall pay to the county of Middlesex, for the support of each child committed to the truant school of said county, $2.50 a week, and such additional sums for each child as shall cover the actual cost of maintenance.

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[1] Name changed to County Training Schools.

VISITATION BY STATE BOARD OF EDUCATION AND BY THE STATE BOARD OF CHARITY.

SEC. 2. County truant schools shall be subject to visitation by the board of education and by the State board of charity, and said boards shall report thereon annually to the general court.

HABITUAL TRUANTS.

SEC. 3. A child between 7 and 14 years of age who willfully and habitually absents himself from school contrary to the provisions of section 1 of chapter 44 shall be deemed to be an habitual truant, and unless placed on probation as provided in section 7 of this chapter, may, upon complaint by a truant officer and conviction thereof, if a boy, be committed to a county truant school, and, if a girl, to the State industrial school for girls; but if the girl is under 12 years of age she shall be committed to the custody of the State board of charity, if they so request, for not more than two years.

HABITUAL ABSENTEES.

SEC. 4. A child between 7 and 16 years of age who may be found wandering about in the streets or public places of any city or town, having no lawful occupation, habitually not attending school, and growing up in idleness and ignorance, shall be deemed to be an habitual absentee, and, unless placed on probation as provided in section 7, may, upon complaint by a truant officer or any other person and conviction thereof, if a boy, be committed to a county truant school, or to the Lyman school for boys, and, if a girl, to the State industrial school for girls; but if the girl be under 12 years of age she shall be committed to the custody of the State board of charity, if they so request, for not more than two years.

HABITUAL SCHOOL OFFENDERS.

SEC. 5. A child under 14 years of age who persistently violates the reasonable regulations of the school which he attends, or otherwise persistently misbehaves therein, so as to render himself a fit subject for exclusion therefrom, shall be deemed to be an habitual school offender, and, unless placed on probation as provided in section 7, may, upon complaint by a truant officer and conviction thereof, if a boy, be committed to a county truant school, or to the Lyman school for boys, and, if a girl, to the State industrial school for girls; but if the girl be under 12 years of age she shall be committed to the custody of the State board of charity, if they so request, for not more than two years.

SUPPORT OF INMATES OF TRUANT SCHOOLS.

SEC. 6. The court or magistrate by whom a child has been committed to a county truant school may make an order relative to the payment by his parents to the county of the cost of his support while in said school, and may from time to time revise and alter such order or make a new order as the circumstances of the parents may justify.

TRUANTS ON PROBATION.

SEC. 7. A court or magistrate by whom a child has been convicted of an offense under the provisions of this chapter may place such a child on probation under the oversight of a truant officer of the city or town in which the child resides, or of a probation officer of said court, for such period and upon such conditions as said court or magistrate may deem best; and if, within such period, the child violates the conditions of his probation, such truant officer or probation officer may, without warrant or other process, take the child before the court, and the court may thereupon sentence him or may make any other lawful disposition of the case.

PERMITS TO BE AT LIBERTY; ALSO RELEASES.

SEC. 8. County commissioners, if they think it will be for the best interest of any child who has been committed to a county truant school under their control, after notice and an opportunity to be heard has been given to the superintendent of schools or, if there is no superintendent, to the school committee of the city or town from which such child was committed to said school, may permit him to be at liberty upon such conditions as said commissioners may deem best; or, with the approval of the court which imposed the sentence, they may discharge him from said school; and upon such parole or discharge they shall make an entry upon their records of the name of such child, the date of parole or discharge and the reason therefor; and a copy of such record shall be transmitted to the court or magistrate by whom such child was committed and to the school committee of the city or town from which he was committed. If such child, in the opinion of said commissioners, violates the conditions of his parole at any time previous to the expiration of the term for which he was committed to said school, such parole may be revoked. If a superintendent of schools or a school committee furnishes evidence satisfactory to said commissioners of the violation by a child of the conditions of his parole, said commissioners shall revoke such parole, and may thereupon issue an order directed to the truant or police officers of any city or town to arrest such child wherever found and return him to said school. Such officer shall arrest such child and return him to said school, where he shall be held, subject to the provisions of this chapter, for the residue of the term of the original sentence. The expense of such arrest and return, so far as approved by the commissioners, shall be paid by the county or counties maintaining said school. A child who has been committed to a county truant school, whether he be confined at the county truant school or on parole as provided in this section, shall be discharged from the custody and care of such school upon his becoming 16 years of age. Releases from the parental school of the city of Boston shall be governed by the provisions of chapter 514 of the acts of the year 1896, and shall be made by the trustees for children, who shall have and exercise the powers given by said chapter to the institutions commissioner of said city.

TEMPORARY RELEASE FROM TRUANT SCHOOL.

SEC. 9. If a near relation of a child who is confined on a sentence as an habitual truant, habitual absentee, or habitual school offender dies or is seriously ill, any member of the board of trustees or county commissioners having charge of the institution may order such child to be released for a specified time, either with or without the custody of the superintendent or other officer, and may revoke, extend, or otherwise modify such order. The expenses incurred in serving such order shall be approved and paid in the same manner as other expenses of the institution in which the child is confined.

DISPOSITION OF VICIOUS INMATES.

Sec. 10. An inmate of a county truant school or of the parental school of the city of Boston who persistently violates the reasonable regulations thereof, or is guilty of indecent or immoral conduct, or otherwise grossly misbehaves, so as to render himself an unfit subject for retention therein, may, upon complaint by the officer in control of said school and conviction thereof, if under 15 years of age, be committed to the Lyman School for Boys; if over 15 years of age, to the Massachusetts Reformatory. If a girl who is committed to the custody of the State board of charity under section 3, 4, or 5 of this chapter proves unmanageable in a private family, she may be committed by the State board of charity to the State industrial school for girls.

SUMMONSES, WARRANTS, JURISDICTION.

Sec. 11. Police, district, and municipal courts and trial justices shall have jurisdiction of offenses arising under the provisions of section 1 of chapter 44 and under the provisions of this chapter. A summons or warrant issued by such court or justice may be served, at the discretion of the court or magistrate, by a truant officer or by any officer qualified to serve criminal process. Upon complaint against a child for any such offense the parents, guardian, or custodian of the child shall be notified as is required by section 17 of chapter 86.[1] A child against whom complaint as a habitual absentee is brought by any other person than a truant officer shall not be committed until notice and an opportunity to be heard have been given to the State board of charity.

TRUANT OFFICERS.

Sec. 12. The school committee of every city and town shall appoint and fix the compensation of one or more truant officers, who may be either male or female as the committee may decide, and shall make regulations for their government. Truant officers shall not receive fees for their services. The school committee of two or more cities or towns may employ the same truant officers.

DUTIES OF TRUANT OFFICERS.

Sec. 13. Truant officers shall inquire into all cases arising under the provisions of sections 1 and 6 of chapter 44 and sections 3, 4, and 5 of this chapter, and may make complaints and serve legal processes issued under the provisions of this chapter. They shall have the oversight of children placed on probation under the provisions of section 7. A truant officer may apprehend and take to school, without a warrant, any truant or absentee found wandering about in the streets or public places thereof.

COMMITMENT OF HABITUAL TRUANTS, HABITUAL ABSENTEES, AND HABITUAL SCHOOL OFFENDERS.

Chapter 389, acts of 1906, provides as follows:

Section 1. Habitual truants, habitual absentees, and habitual school offenders shall be committed to truant schools, however named, for the instruction and training of children, and now provided for by the several counties, and not to any other institution or place.

Sec. 2. This act shall not apply to the Plummer Farm School of Reform for Boys, at Winter Island, in Salem.

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[1] Of the Revised Laws. See also chapter 314, section 4, acts of 1906.

EMPLOYMENT OF WOMEN AND CHILDREN.

[Chapter 514, Acts of 1909, as amended.]

GENERAL PROVISIONS.

SEC. 17. The following words and phrases, as used in all laws relative to the employment of labor shall, unless a different meaning is plainly required by the context, have the following meanings:

"Child" or "minor" shall mean a person under 18 years of age, except that in regard to the compulsory attendance of illiterate minors at day or evening schools, the word "minor" shall mean a person under the age of 21 years.

"Factory" shall mean any premises where steam, water, or other mechanical power is used in aid of any manufacturing process there carried on.

"Mercantile establishments" shall mean any premises used for the purposes of trade in the purchase or sale of any goods or merchandise, and any premises used for the purposes of a restaurant or for publicly providing and serving meals.

"Public building" shall mean any building or premises used as a public or private institution, church, theater, public hall, place of public entertainment, resort, or assemblage.

"Schoolhouse" shall mean any building or premises in which public or private instruction is afforded to not less than 10 pupils at one time.

"Workshop" shall mean any premises, room, or place, which is not a factory as above defined, wherein manual labor is exercised by way of trade or for purposes of gain in or incidental to a process of making, altering, repairing, ornamenting, finishing, or adapting for sale any article or part of an article, and to which or over which premises, room, or place the employer of the persons working therein has the right of access or control; but the exercise of such manual labor in a private house or private room by the family dwelling therein or by any of them or if a majority of the persons therein employed are members of such family, shall not of itself constitute such house or room a workshop within this definition.

WHEN CHILDREN UNDER 14 AND CHILDREN OVER 14 AND UNDER 16 MAY NOT BE EMPLOYED.

SEC. 56. No child under the age of 14 years, and no child who is over 14 and under 16 years of age who does not have a certificate as required by the four following sections certifying to the child's ability to read at sight and to write legibly simple sentences in the English language, shall be employed in any factory, workshop, or mercantile establishment. The ability to read at sight and to write legibly simple sentences in the English language shall be construed as meaning such ability to read and write as is required for admission to the fourth grade of the public schools of the city or town in which such minor lives. No child under the age of 14 years shall be employed at work performed for wages or other compensation, to whomsoever payable, during the hours when the public schools of the city or town in which he resides are in session, or be employed at work before 6 o'clock in the morning or after 7 o'clock in the evening. But minors to whom the provisions of this section apply shall be permitted to work on Saturdays between the hours of 6 in the morning and 7 in the evening in mercantile establishments.

PROVISIONS RELATING TO EMPLOYMENT OF CHILDREN UNDER 16 AND MINORS.

SEC. 57. No child under 16 years of age shall be employed in a factory, workshop, or mercantile establishment unless his employer procures and keeps on file, accessible to the truant officers of the city or town, and to the district police and inspectors of factories and public buildings, an age and schooling certificate and keeps two complete lists of all such minors employed therein, one on file, and one conspicuously posted near the principal entrance of the building in which such children are employed, and also keeps on file and sends to the superintendent of schools, or, if there is no superintendent, to the school committee, a complete list of the names of all minors employed therein who can not read at sight and write legibly simple sentences in the English language.

AGE AND SCHOOLING CERTIFICATES OF MINORS.

Sec. 58. An age and schooling certificate shall be approved only by the superintendent of schools or by a person authorized by him in writing, or, if there is no superintendent of schools, by a person authorized by the school committee; but no member of a school committee or other person authorized as aforesaid shall approve such certificate for any minor then in or about to enter his own employment or the employment of a firm or corporation of which he is a member, officer, or employee. The printed form of such age and schooling certificate shall be provided by the chief of the district police. No such certificate shall be approved by any person unless he is satisfied that the minor therein named is able to read at sight and to write legibly simple sentences in the English language, as is required for admission to the fourth grade of the public schools of the city or town in which such minor lives, nor until such person has received a certificate signed by a physician, as provided in chapter 502 of the act of the year 1906 and acts passed in amendment thereof, or by a physician appointed by the school committee, stating that said minor has been examined by him and in his opinion is in sufficiently sound health and physically able to perform the work which the minor intends to do: *Provided, however*, That the age and schooling certificate may be approved and issued without a physician's certificate if there shall be on file in connection with the public schools a written record in regard to the child's physical condition made within one year and the person authorized to approve said age and schooling certificate after having examined such record shall certify that in his opinion said minor is in sufficiently sound health and physically able to perform the work which the minor intends to do. The person who approves the certificate may administer the oath provided for therein, but no fee shall be charged therefor.

Sec. 59. An age or schooling certificate shall not be approved unless satisfactory evidence is furnished by a certificate of birth or baptism of such minor, or by the register of birth of such minor with a city or town clerk, that such minor is of the age stated in the certificate, except that other evidence, under oath, may be accepted in the case the superintendent or person authorized by the school committee, as provided in the preceding section, decides that neither the certificate of birth or baptism, nor the register of birth is available for the purpose. The certificate of the superintendent of the Lyman School for Boys or of the State industrial school for girls given to a child who has been an inmate of such school, shall be sufficient evidence as to the age and ability to read at sight and to write legibly simple sentences in the English language.

EMPLOYMENT TICKET AND AGE AND SCHOOLING CERTIFICATE.

Sec. 60. The age and schooling certificate of a minor under 16 years of age shall not be approved and signed until he presents to the person who is authorized to approve and sign it an employment ticket duly filled out and signed. A duplicate of each age and schooling certificate shall be filled out and shall be kept on file by the school committee. Any explanatory matter may, in the discretion of the school committee or superintendent of schools, be printed with such certificate. The employment ticket and the age and schooling certificate, shall be separately printed and shall be filled out, signed, and held or surrendered as indicated in the following forms:

Employment Ticket, St. 1909, c. , § .

When [name of minor] , height [feet and inches] ; complexion [fair or dark] , hair [color] , presents an age and schooling certificate duly signed, I intend to employ [him or her].

(Signature of intending employer or agent.)

(Town or city and date.)

AGE AND SCHOOLING CERTIFICATE. ST. 1909, C. . § .

This certifies that I am the [father, mother, guardian, or custodian] of [name of minor] , and that [he or she] was born at [name of city or town] , in the county of [name of county, if known] , and State [or country] of , on the [day and year of birth] , and is now [number of years and months] old.

(Signature of father, mother, guardian, or custodian.)

(City or town and date.)

Then personally appeared before me the above named [name of person signing] , and made oath that the foregoing certificate by [him or her] signed is true to the best of [his or her] knowledge and belief. I hereby approve the foregoing certificate of [name of minor] , height [feet and inches] , complexion [fair or dark] , hair [color] , having no sufficient reason to doubt that [he or she] is of the age therein certified. I hereby certify and am satisfied that [he or she] can read at sight and can write legibly simple sentences in the English language. I further certify that in my opinion (or in the opinion of the physician by whom said minor has been examined in accordance with section 58 of the above chapter) he (or she) is in sufficiently sound health and physically able to perform the work which he (or she) intends to do.

This certificate belongs to [name of minor in whose behalf it is drawn] , and is to be surrendered to [him or her] whenever [he or she] leaves the service of the corporation or employer holding the same; but if not claimed by said minor within 30 days after such time, it shall be returned to the superintendent of schools, or, if there is no superintendent of schools, to the school committee.

(Signature of person authorized to approve and sign with official character or authority.)

(City or town and date.)

In the case of a minor who can not read at sight and write legibly simple sentences in the English language the certificate shall continue as follows, after the word "language":

I hereby certify that [he or she] is regularly attending the [name] public evening school. This certificate shall continue in force only so long as the regular attendance of said minor at the evening school is indorsed weekly by a teacher thereof.

PENALTY FOR CERTIFYING TO FALSE STATEMENT.

Whoever, being authorized to sign the foregoing certificate, knowingly certifies to any materially false statement therein shall be punished by a fine of not more than $50.

ILLEGAL EMPLOYMENT OF MINORS AND DUTIES OF TRUANT OFFICERS.

SEC. 61. Whoever employs a minor under the age of 16 years, and whoever procures or, having under his control a minor under such age, permits such minor to be employed in violation of the provisions of sections 56 and 57 of this act, shall for each offense be punished by a fine of not more than $300, or by imprisonment for not more than six months, or by both such fine and imprisonment; and whoever continues to employ a minor in violation of the provisions of either of said sections, after being notified thereof by a truant officer or by an inspector of factories and public buildings, shall for every day thereafter while such employment continues be punished by a fine of not less than $20 nor more than $100, or by imprisonment for not more than six months; and whoever forges, or procures to be forged, or assists in forging a certificate of birth of such minor, and whoever presents or assists in presenting a forged certificate of birth to a school committee or to the person authorized by law to receive certificates, for the purpose of fraudulently obtaining the school certificate mentioned in section 60, shall be punished by a fine of not less than $100 nor more than $500, or by imprisonment for not less than three months nor more than one year, or by both such fine and imprisonment.

SEC. 62. Truant officers may visit the factories, workshops, and mercantile establishments in their several cities and towns and ascertain whether any minors are employed therein contrary to the provisions of this act, and shall report any cases of such illegal employment to the school committee and to the chief of the district police or to the inspector of factories and public buildings. Inspectors of factories and public buildings shall visit all factories, workshops, and mercantile establishments within their respective districts and ascertain whether any minors are employed therein contrary to the provisions of this act, and shall enter complaint against whoever is found to have violated any of said provisions. An inspector of factories and public buildings who knowingly and willfully violates any provision of this section may be punished by a fine of not more than $100.

SEC. 63. A truant officer may apprehend and take to school, without a warrant, any minor under the age of 16 years who is employed in any factory, workshop, or mercantile establishment in violation of the provisions of sections 56 and 57 of this act, and such truant officer shall forthwith report to the police, district, or municipal court or trial justice within whose judicial district the illegal employment occurs, the evidence in his possession relating to the illegal employment of any child so apprehended, and shall make complaint against whomever the court or trial justice may direct. A truant officer who knowingly and willfully violates any provision of this section may be punished by a fine of not more than $100 for each offense.

TRUANT OFFICERS AND INSPECTORS OF FACTORIES.

SEC. 64. Inspectors of factories and public buildings and truant officers may require that the age and schooling certificates and lists of minors who are employed in factories, workshops, or mercantile establishments shall be produced for their inspection. A failure to produce to an inspector of factories and public buildings or to a truant officer an age and schooling certificate or list required by law shall be prima facie evidence of the illegal employment of any person whose age and schooling certificate is not produced or whose name is not so listed. A corporation or other employer or any agent or officer thereof who retains an age and schooling certificate in violation of the provisions of said certificate shall be punished by a fine of not less than $10 nor more than $100.

SEC. 65. Police, district, and municipal courts and trial justices shall have jurisdiction of offenses arising under the provisions of the four preceding sections. A summons or warrant issued by any such court or justice may be served, at the discretion of the court or magistrate, by an inspector of factories and public buildings, or by a truant officer, or by any officer qualified to serve criminal process.

ILLITERATE MINORS MUST ATTEND EVENING SCHOOLS.

SEC. 66. While a public evening school is maintained in the city or town in which any minor [1] resides who is over 14 years of age and who does not have a certificate signed by the superintendent of schools, or by the school committee, or by some person acting under authority thereof, certifying to his ability to read at sight and write legibly simple sentences in the English language, no person shall employ him, and no parent, guardian, or custodian shall permit him to be employed unless he is a regular attendant at such evening school or at a day school; but upon presentation by him of a certificate signed by a registered practising physician and satisfactory to the superintendent of schools, or, if there is no such superintendent, to the school committee, showing that his physical condition would render such attendance in addition to daily labor prejudicial to his health, said superintendent or school committee shall issue a permit authorizing his employment for such period as said superintendent or school committee may determine. Said superintendent or school committee, or teachers acting under authority thereof, may excuse any absence from such evening school which arises from justifiable cause. Any minor not holding such certificate shall furnish to his employer a record of his school attendance each week while the evening school is in session, and when said record shows unexcused absences from the sessions his attendance shall be deemed irregular according to this act. Whoever employs a minor in violation of the provisions of this section shall forfeit not more than $100 for each offense to the use of the evening schools of such city or town. A parent, guardian, or custodian who permits a minor under his control to be employed in violation of the provisions of this section shall forfeit not more than $20 to the use of the evening schools of such city or town.

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[1] For law relating to minors over 14 and under 16 years of age see sec. 1, as amended, chap. 44, R. L., p. 121 of this pamphlet, and sec. 56, chap. 514, acts of 1909, p. 125, of this pamphlet.

PUBLIC EXHIBITION OF CHILDREN.

SEC. 76. No person shall employ, exhibit, or sell, apprentice, or give away a child under 15 years of age for the purpose of employing or exhibiting him in dancing on the stage, playing on musical instruments, singing, walking on a wire or rope, or riding or performing as a gymnast, contortionist, or acrobat in a circus, theatrical exhibition, or in any public place, or cause, procure, or encourage such child to engage therein; but the provisions of this section shall not prevent the education of children in vocal and instrumental music or dancing or their employment as musicians in a church, chapel, school, or school exhibition, or prevent their taking part in any festival, concert, or musical exhibition upon the special written permission of the mayor and aldermen of a city or of the selectmen of a town. Whoever violates the provisions of this section shall be punished by a fine of not more than $200 or by imprisonment for not more than six months.

SEC. 77. A license shall not be granted for a theatrical exhibition or public show in which children under 15 years of age are employed as acrobats or contortionists or in any feats of gymnastics or equestrianism, or in which such children who belong to the public schools are employed or allowed to take part as performers on the stage in any capacity, or if, in the opinion of the board authorized to grant licenses, such children are employed in such a manner as to corrupt their morals or impair their health; but the provisions of this section shall not prevent the granting of special permission authorized by the preceding section.

LICENSING OF MINORS, BY SCHOOL COMMITTEES, TO ENGAGE IN CERTAIN OCCUPATIONS IN CITIES.

SECTION 17, chapter 65, Revised Laws. The mayor and aldermen or selectmen may make regulations relative to the exercise of the trade of bootblacking by minors and to the sale by minors of any goods, wares, or merchandise the sale of which is permitted by section 15, and may prohibit such sales or such trade, or may require a minor to obtain from them a license therefor to be issued on terms and conditions prescribed in such regulations: *Provided*, That in the case of persons under the age of 14 years in the cities of the Commonwealth the foregoing powers shall be vested in and exercised by the school committees of said cities. A minor who sells such articles or exercises such trade without a license if one is required or who violates the conditions of his license or any of the provisions of said regulations shall be punished by a fine of not more than $10 for each offense. Any person who, having a minor under his control, knowingly permits him to violate the provisions of this act, and any person who procures or employs a minor to violate the provisions of this act, and any person who either for himself or as agent of any other person or of any corporation knowingly furnishes or sells to any minor any of the articles above referred to with knowledge that said minor intends to sell said articles in violation of the provisions of this act, and after having received written notice from the *school committee* that the minor is unlicensed, shall be punished by a fine of not more than $200 or by imprisonment for not more than six months. Truant and police officers shall enforce the provisions of this chapter.

EMPLOYMENT OF CERTAIN MINORS IN FACTORIES, WORKSHOPS, AND MERCANTILE ESTABLISHMENTS.

Chapter 310, Acts of 1911, provides as follows:

SECTION 1. No illiterate minor between the age of 16 and 21 years shall be employed in a factory, workshop, mechanical or mercantile establishment unless his employer procures and keeps on file, accessible to the truant officers of the city or town and to the district police and inspectors of factories and public buildings, a certificate showing that such minor is 16 years of age or over. Said certificate shall give the place and date of birth of such minor and his personal description. The printed form of the certificate shall be provided by the chief of the district police and shall be approved by the attorney general.

ADDITIONAL DUTIES OF TRUANT OFFICERS RELATIVE TO CARE OF INDIGENT AND NEGLECTED CHILDREN.

Chapter 356, Acts of 1904, provides as follows:

SECTION 1. It shall be the duty of *truant officers in cities* and of the overseers of the poor in towns, as often as may be deemed necessary by them, to make diligent search throughout their respective cities and towns for children under the age of 16 who are suffering want through poverty, privation, or from the neglect of their parents or guardians, or of any other persons having them in charge or from any cause whatsoever.

SEC. 2. Where such children are found without parents or guardians or in charge of such parents or guardians as in the judgment of the officers or overseers aforesaid are unfit to care for children by reason of mental incapacity, dissolute habits, or poverty, it shall be the duty of the officers and overseers aforesaid to provide for the temporary care of such children until proceedings may be had against them if necessary, according to the provisions of chapter 334 of the acts of the year 1903.

SEC. 3. Reasonable expenses incurred by the officers and overseers aforesaid in furnishing aid as provided by this act shall be paid by the city or town wherein the persons have legal settlements, and, if they are without settlement, by the Commonwealth, after approval by the State board of charity; and notice in writing shall be sent to the place of settlement or, if such persons are unsettled, to the State board of charity as is otherwise provided by law.

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MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS.

CONTENTS.—Introductory notes.—Publications of associations.—General reference.—Educational history.—Current educational conditions.—Pedagogics and didactics.—Educational psychology, Child study.—Special methods of instruction.—Special subjects of curriculum.—Kindergarten and primary school.—Rural education.—Secondary education.—Teachers: Training and professional status.—Higher education.—School administration.—School management.—School architecture.—School hygiene and sanitation.—Sex hygiene.—Play and playgrounds.—Social aspects of education.—Child welfare.—Moral and religious education.—Manual and vocational training.—Professional education.—Education of women.—Exceptional children.—Libraries and reading.—Bureau of education: Recent publications.—New periodicals.—Periodicals indexed in this number.—Bulletin of the Bureau of education.

INTRODUCTORY NOTES.

The following are representative books and articles selected from the titles in the accompanying list, the numbers in parentheses referring to the numbers of the full entries:

Monroe, Cyclopedia of education, volume 5 (6); Graves' History of education in modern times (7); Ward, Montessori method and the American school (61); Betts and Hall, Better rural schools (62); Dabney, Student body of University of Cincinnati (90); Hibben, Type of graduate scholar (95); Dutton, Investigation of school systems (106); Gill, A new citizenship (111); Richards, Study of industries for purposes of vocational education (144); Grant and Hodgson, Case for coeducation (155); Johnston, Library as a university factor (167).

Of the publications listed, only those named in the section headed "Bureau of Education: Recent publications" are available for free distribution by this office. All others may ordinarily be obtained from their respective publishers, either directly or through a dealer, or in the case of an association publication, from the secretary of the issuing organization. A list of periodicals indexed, with places of publication, may be found at the end of this bulletin.

Books, pamphlets, etc., intended for inclusion in this record should be sent to the library of the Bureau of Education, Washington, D. C.

BOOKS, PAMPHLETS, PERIODICAL ARTICLES.

PUBLICATIONS OF ASSOCIATIONS.

1. **Association of American medical colleges.** Proceedings of the twenty-third meeting, held at Chicago, February 26, 1913. 75 p. 8°. (F. C. Zapffe, secretary-treasurer, Chicago, Ill.)

   Contains: 1. Egbert Lefevre: Some problems of medical education, p. 5–17. 2. C. R. Bardeen: Divided schools, p. 22–28. 3. W. C. Borden: Medical college organization, p. 29–38.

2. **Lake Mohonk conference of friends of the Indian and other dependent peoples.** Report of the thirty-first annual conference . . . October 22, 23, and 24, 1913. Published by the Lake Mohonk conference of friends of the Indian and other dependent peoples, 1913. 224 p. 8°. (H. C. Phillips, secretary, Mohonk Lake, N. Y.)

   Contains: 1. Paul Monroe: What the Philippine school system is doing for Philippine freedom, p. 96–103. 2. S. W. Eckman: Importance of educational work in Porto Rico, p. 164–69. 3. J. W. Osborn: Limitations of educational facilities in the Philippines, p. 174–75.

3. **National league of nursing education.** Proceedings of the nineteenth annual convention . . . held at Atlantic City, N. J., June 23, 24, 25, 1913. Baltimore, Williams & Wilkins company, 1913. 114 p. 8°. (Sara E. Parsons, secretary, Boston, Mass.)

   Contains: 1. Isabel M. Stewart: Report of the committee for approaching women's colleges, p. 35–38. 2. Mrs. E. F. S. Smith: Factors of elimination in schools for nurses, p. 54–59. 3. Amy P. Miller: Report of conference on preliminary teaching, p. 65–68.

4. **South Carolina state teachers' association.** Proceedings of the forty-first annual meeting . . . held at Columbia, S. C., March 13, 14 and 15, 1913. Columbia, S. C., State co., printers, 1914. 51 p. 8°. (L. T. Baker, secretary, Columbia, S. C.)

   Contains: 1. R. C. Burts: President's address, p. 26–31. 2. O. B. Martin: Teaching out of school, p. 32–35. 3. J. E. Swearingen: Suggestions for improving the teaching profession in South Carolina, p. 36–39.

5. **Vermont state teachers' association.** Report of the sixty-third annual convention . . . Rutland, Vt., October 24, 25 and 26, 1912. Bellows Falls, Vt., P. H. Gobie press, 1913. 129 p. 12°. (Amy B. Drake, secretary, St. Johnsbury, Vt.)

   Contains: 1. G. S. Wright: President's address, p. 23–30. 2. Flexible grading and promotions, p. 30–37. 3. Caroline M. Griswold: Co-operation of parents and teachers, p. 81–85. 4. A. F. Stone: What business demands of the schools, p. 86–92. 5. T. F. Collier: The history teacher's opportunity, p. 93–102. 6. Mrs. H. K. Whitaker: What society demands of the schools, p. 109–14.

GENERAL REFERENCE.

6. A cyclopedia of education, ed. by Paul Monroe. Volume 5. Pol–Zwi. New York, The Macmillan company, 1913. xiii, 892 p. illus. 4°.

   Analytical indexes: p. 855–92.
   This volume completes the work.

EDUCATIONAL HISTORY.

7. **Graves, Frank Pierrepont.** A history of education in modern times. New York, The Macmillan company, 1913. xv, 410 p. 12°.

8. **Kerr, John.** Scottish education, school and university, from early times to 1908; with an addendum 1908–1913. Cambridge, University press, 1913. xvi, 454 p. 8°.

CURRENT EDUCATIONAL CONDITIONS.

9. **Armani, Tarquinio.** Il liceoginnasio moderno. Rivista d'Italia, 2: 641–72, November 15, 1913.

   Justifies the place of this recent development in the Italian educational system.

10. **Bell, Clair H.** Experiences of an American exchange teacher in Germany. Educational review, 47: 28–56, January 1914.

    Work of the writer consisted in teaching conversational English to small volunteer groups of boys from the four highest classes, viz, Untersekunda, Obersekunda, Unterprima, and Oberprima, in the Musterschule, Frankfurt a. M., Germany. Says that during his school course the German boy gains about two years in development over the American boy.

11. **Corson, O. T.** The Ohio school survey. Ohio educational monthly, 63: 1–8, January 1914.

12. **Whitehouse, John Howard.** A national system of education. Cambridge, University press, 1913. 92 p. 8°.

    Discusses conditions and prospects in England.

PEDAGOGICS AND DIDACTICS.

13. **Bruce, H. Addington.** New theories in education. Outlook, 106: 144–48, January 17, 1914.

    Claims that "the real trouble is that education, in the sense of formal, conscious guidance and instruction, does not begin soon enough."

14. **Clendenen, Taylor C.** Value of supervised study. School news and practical educator, 27: 194–95, January 1914.

15. **Howe, Oliver H.** Cultural education. Education, 34: 320–27, January 1914.

    Shows the advantages of cultural education, to supplement practical studies. It makes for the development of character; for a breadth of sympathy with life in all its forms.

16. **Kiroul, Paul.** Le système de concentration dans l'enseignement. (Études didactiques) Ostende, Belgium, Bureau international de documentation éducative, 1913. 10 p. 8°. (Bibliothèque internationale d'éducation)

    Describes a Netherlandish experiment of the "education for life" type, similar to the Rock Hill experiment in the United States.

17. **Laird, Sinclair.** Meaning of experimental education. School, 2: 293–97, January 1914.

18. **McManis, John T.** The locus of studies. Educational bi-monthly, 8:95–105, December 1913.

    Claims that the locus of studies has a twofold aspect. In the first place we must see that the subject fits into the stage of growth of each individual child, in the second place, the locus of studies brings us back to the old practice of "Correlation of studies."

19. Neue ziele und wege der pädagogik. Pädagogische zeitung, 42: 925–7, December 11, 1913.

    Report of Dr. Brahn's address before the Pädagogische Zentrale, in which the attempt is made to place current tendencies in pedagogy historically. Suggestive.

20. **Reinach, Théodore.** L'éducation athénienne et l'éducation française. Revue pédagogique, 63: 531–56, December 1913.

21. **Repplier, Agnes.** Popular education. Atlantic monthly, 113: 1–8, January 1914.

    Writer says the theory that "school work must appeal to a child's fluctuating tastes, must attract a child's involuntary attention, does a grievous wrong to the rising generation; yet it is upheld in high places."

22. **Sanders, Frederic W.** The organization of education. Education, 34: 273–82, January 1914.

    First article of a series dealing with some "educational postulates and practical suggestions as to the organization of schools."

23. **Smith, Henry Bompas.** Education as the training of personality; an inaugural lecture. Manchester, University press, 1913. 38 p. 12°. (Manchester university lectures. no. XVII)

24. **Springer, F. W.** Fundamentals in education. Bulletin of the Society for the promotion of industrial education, 4: 37–47, December 1913.

    Discusses the subject under the following headings: Men and women teachers, Careers, Educators, and School trend.

25. **Wilson, Albert.** Does the child start fair? Parents' review, 25: 1–12, January 1914.

EDUCATIONAL PSYCHOLOGY, CHILD STUDY.

26. Do you want one of these [10] boys? They have been examined for the Delineator by Dr. Gustave A. Blumenthal, vocational expert for the District of Columbia. He gives a character reading of each. Delineator, 84: 7, February 1914. illus.

27. **Hinkle, E. C.** Tests for efficiency in arithmetic. Educational bi-monthly, 8: 123–35, December 1913.

Tells of the Rice test and the Stone test and gives results of their use in some experiments.

28. **Kohs, Samuel C.** The Binet test and the training of teachers. Training school bulletin, 10: 113–17, January 1914.

The story of training fifty-eight teachers to use the Binet test.

29. **Mead, Cyrus D.** The age of walking and talking in relation to general intelligence. Pedagogical seminary, 20: 460–84, December 1913.

Bibliography: 483–84.

30. **Morse, Josiah.** A comparison of white and colored children measured by the Binet scale of intelligence. Popular science monthly, 84: 75–79, January 1914.

Measurement with the Binet scale, as revised by Dr. H. H. Goddard. Tests made by Alice C. Strong on white and colored school children of Columbia, S. C. Concludes that "negro children from 6 to 12 and possibly 15 years are mentally different, and also younger than southern white children of corresponding age, and this condition is partly due, at least, to causes that are native or racial."

31. **Strong, Alice C.** Three hundred fifty white and colored children measured by the Binet-Simon scale of intelligence: a comparative study. Pedagogical seminary, 20: 485–515, December 1913.

Bibliography: p. 512–15.
The children tested were in the public schools of Columbia, S. C.

SPECIAL METHODS OF INSTRUCTION.

32. **Bailey, Carolyn Sherwin.** For the story teller; story telling and stories to tell. Springfield, Mass., Milton Bradley company, 1913. 261 p. 8°

33. **Mac Munn, Norman.** Differentialism; a new method of class self-teaching. London, W. H. Smith & son [1913] 27 p. 12°

34. **Schmidt, A.** Der kinematograph als schädiger und helfer in erziehung und unterricht. Pädagogische warte, 20: 1288–96, December 1, 1913.

Hostile to moving pictures under present conditions. Suggests good films to fight bad, and commends circuit films of the "Society for the spread of public education."

35. **Sudeley, —.** The public utility of museums. Nineteenth century, 74: 1211–19, December 1913.

Discusses the educational value of museums. From English standpoint.

SPECIAL SUBJECTS OF CURRICULUM.

36. **Anderson, Madge.** A real school paper. School-arts magazine, 13: 341–47, January 1914.

Tells of the management and success of the "Comet," issued by the West division high school, Milwaukee, Wis.

37. **Appleton, R. B.** Some practical suggestions on the direct method of teaching Latin. Cambridge, W. Heffer & sons ltd., 1913. 83 p. 12°.

38. **Atherton, Lewis.** Literary selections most frequently memorized in the elementary school. Elementary school teacher, 14: 208–20, January 1914.

Statistics based on an examination of 34 selected state, county, and city courses of study.

39. **Bean, C. H.** How English grammar has been taught in America. Education, 34: 301–311, January 1914.

40. **Booth, Mary J.** Material on geography which may be obtained free or at small cost. Journal of geography, 12: 129–51, January 1914.

41. **Chubb, Percival.** The blight of literary bookishness. English journal, 3: 15–27, January 1914.

A paper read before the National council of teachers of English at the annual meeting in Chicago, November 28, 1913.

42. Commercial education in secondary schools. School world, 16: 16–23, January 1914.

    Symposium on the organization, curriculum and teaching of commercial subjects to pupils of high school age, by eight men and women in active work in English secondary education.

43. **Coombs, F. E.** Methods of teaching primary reading. School, 2: 273–76, January 1914.

    Classification of the general types to show their development and to allow comparative study.

44. **Coulter, John G.** Organization and content of high school science. School and home education, 33: 171–75, January 1914.

    Statement of principles underlying a general science course presented for discussion at the November, 1913, meeting of the Central association of science and mathematics teachers.

45. **Day, Clive.** Commercial and industrial history in secondary schools. History teacher's magazine, 5: 11–16, January 1914.

46. **Gerhard, E. Schultz.** The value of studying German. American education, 17: 204–7, December 1913.

    "A scholarly and practical discussion of the subject."

47. **Gillette, John M.** An outline of social study for elementary schools. American journal of sociology, 19: 491–509, January 1914.

48. **Guild, Thacher H.** Suggestions for the high-school play. English journal, 2: 637–46, December 1913.

    Reprinted from the April Bulletin of the Illinois association of teachers of English.

    Gives a list of some plays which have proved successful at the University of Illinois and the local schools.

49. **Kurtzworth, H. M.** The school publication as a factor in art education. School-arts magazine, 13: 331–40, January 1914.

50. **McKay, Ethel H.** The problem of the primer. School, 2: 277–83, January 1914.

    Outline of a method of using the phonic system with the primer in teaching reading.

51. **Moore, Maud.** Reading and phonics. Primary education, 22: 5–9, January 1914.

52. **Syford, Ethel.** Music for children. New England magazine, 48: 544–46, January 1914.

    Making the elements of music study more interesting to children. Shows educational value of such study.

53. **Tozier, Josephine.** If Mme. Montessori taught music, this engaging new method, which is phenomenally successful, would probably be her way of doing it. Delineator, 84: 16–17, 61, February 1914.

    The author presents "Mlle. Chassavant, a Frenchwoman who has invented a unique music-teaching method. The results of the Chassavant method are to help children to read and execute music as phenomenally as Montessori children read and write their mother tongue. The Chassavant method, moreover, is built on Montessori sense-training, although developed independently of the Montessori method."

54. **Trendley, Mary.** The unification of English history. Education, 34: 295–300, January 1914.

    "The chief danger in the study or teaching of history is that we become so wrapped up in details that we lose the larger outlook."

55. **Wicke, R.** Der lehrplan für den gesangunterricht. Archiv für pädagogik, 2: 113–29, December 1913.

    Analyzes and criticizes rather sharply present German practice with respect to music in the public school curriculum.

56. **Young, Charles E.** The other side of the modern language question. Education, 34: 316–19, January 1914.

    Registers a plea for laying the stress in our modern language teaching on acquiring ability to read.

KINDERGARTEN AND PRIMARY SCHOOL.

57. **Binzel, Alma L.** Early education: the kindergarten; the house of childhood; the "exceptional home." Kindergarten review, 24: 271–83, January 1914.

58. **Buck, Philo M.,** *jr.* Puero reverentia. Mid-west quarterly, 1: 173–86, January 1914.

59. **Fisher, Dorothy Canfield.** The Montessori manual, in which Dr. Montessori's teachings and educational occupations are arranged in practical exercises or lessons for the mother or the teacher. Chicago, The W. E. Richardson co., 1913. 126 p. illus. 8°.

60. **Pollock, Horatio M.** Notes on the development of the Montessori system. American education, 17: 268–71, January 1914.

    Writer says: "Although I have profound admiration for the new pedagogy and its founder, I am convinced that the departure from customary methods is too great to permit its ready adoption in our schools."

61. **Ward, Florence Elizabeth.** The Montessori method and the American school. New York, The Macmillan company, 1913. xvi, 243 p. illus. 12°.

RURAL EDUCATION.

62. **Betts, George Herbert** *and* **Hall, Otis Earle.** Better rural schools. Indianapolis, The Bobbs-Merrill company [1914] 12 p. l., 512 p. illus. 8°.

    CONTENTS.—Part I. The demand for better rural schools.—Part II. The curriculum of the rural school.—Part III. The teacher and the rural school.—Part IV. Consolidation and rural school efficiency.—Part V. Rural school administration.—Part VI. The outlook for rural education.

    Bibliography: p. 491–97.

63. **Cubberley, Ellwood P.** Politics and the country-school problem. Educational review, 47: 10–21, January 1914.

    Advocates the subordination of the district school system, the erection of the county as the unit for school administration, and the absolute elimination of party politics from the management of the schools. Writer says that Utah and Maryland offer fine examples of a good system of county school organization. Recommends also the supervisory system of Massachusetts, or the Minnesota plan for the reorganization and consolidation of districts.

64. **Culter, Horace M.** *and* **Stone, Julia M.** The rural school, its methods and management. Boston, New York [etc.] Silver, Burdett and company [©1913] xi p., 1 l., 365 p. incl. front., illus. 12°.

    Contains "References." "A working library for country schools": p. 135–142.

65. **Curtis, Henry S.** Educational extension through the rural social center. Education, 34: 283–94, January 1914.

    Chapter from a forthcoming book, to be published shortly by Ginn & co., and entitled "Play and recreation in the open country." Describes various activities such as school exhibitions, extension lectures, institutes and Chautauquas, civic debates, libraries, etc.

66. **Dadisman, S. H.** Manual training in the country school. Industrial-arts magazine, 1: 22–24, January 1914.

    Shows how manual training in the Consolidated school of Rollo, Illinois, is meeting the needs of the rural community.

67. **Evans, C. E.** Training teachers for rural service. Texas school magazine, 16: 12–15, January 1914.

68. **Farwell, Parris Thaxter.** Village improvement. New York, Sturgis & Walton company, 1913. xi, 362 p. illus. 12°. (Farmer's practical library, ed. by E. Ingersoll.)

    Bibliography: p. 350–56.

    Includes chapters on Educational and co-operative work, The public school, Boys' and girls' clubs, and Play for young and old.

69. **Hayes, D. W.** The normal school and the rural problem. American schoolmaster, 6: 433–48, December 1913.

Paper read before the joint meeting of the Departments of normal schools and of rural and agricultural education of the National education association, at Salt Lake City, July 8, 1913.

The article "presents a problem of special importance at the present time, suggests what can be done on the part of teachers' training schools towards its solution, and indicates what is now being done in this direction."

70. **Kirk, Will T.** Taking the high school into the country. Popular educator, 31: 247–50, January 1914.

Tells of the work of L. R. Alderman in Oregon.

71. **Reagan, Chapell R.** Linking the school with the home and community. Normal instructor, 23: 15–16, January 1914.

Shows what a poor rural community at Linville, Louisiana, has done for its schools.

72. **St. Clair, David F.** The rural life engineer and his work. American review of reviews, 49: 73–80, January 1914.

Describes work of the Y. M. C. A. county secretaries or rural-life engineers. Illustrated.

73. **Schuster, Sarah J.** Regeneration of the rural school. School century, 9: 204–6, January 1914.

Discusses the work of Mr. E. J. Tobin, Superintendent of schools, Cook county, Illinois.

Also in Catholic school journal, 13: 312–13, 319, January 1914.

74. **Threadgill, *Mrs.* John.** The traveling library commission and the rural schools. Oklahoma school herald, 21: 12–13, December 1913.

75. **Womack, J. P.** The opportunity of the country teacher. Journal of education, 79: 35–37, January 8, 1914.

This article is from an address given before the Arkansas state teachers' association at Little Rock.

SECONDARY EDUCATION.

76. **Allen, I. M.** Some experiments in high school instruction. School review, 22: 26–44, January 1914.

Experiments in teaching elementary science in the Wichita high school, Kans. Conclusion drawn that high school instruction must be "intensified rather than extensified, or problemized rather than topicized."

77. **Bole, John A.** The organization of a large high school. School review, 22: 1–11, January 1914.

Describes process of organization of the Eastern district high school, Brooklyn, N. Y. Draws the following conclusion: "Promotion by subject does not necessitate small classes, nor classes uneven in size. If classes are of uniform size, a relatively large number of pupils can be taught without overcrowding classes and without overworking teachers."

78. **Maphis, Charles G.** A decade of growth in secondary education in the Southern states. High school quarterly, 2: 80–87, January 1914.

A paper read before the Association of colleges and secondary schools of the Southern states at its annual meeting held at Knoxville, November 5–8, 1913.

79. **Stewart, Joseph S.** Report of the Southern commission on accredited schools, Knoxville, Tenn., Nov. 7th, 1913. High school quarterly, 2: 99–104, January 1914.

TEACHERS: TRAINING AND PROFESSIONAL STATUS.

80. The Arkansas state normal school. Arkansas teacher, 1: 7–11, December 1913.

81. **Jastrow, Hedwig.** Entschädigung der wegen verheiratung aus dem amte scheidenden lehrerinnen. Lehrerin, 30: 297–99, December 20, 1913.

Pension rights of women school teachers who leave the profession to get married. Gives tables.

82. **McAndrew, William.** The joy of teaching. Journal of education, 78: 625–26, December 18, 1913.

83. **New York state teachers' association.** Report on a professional code of ethics for teachers, by the sub-committee of the Executive committee, George M. Forbes, chairman. American education, 17: 272–75, January 1914.

Also in School bulletin, 40: 73–74, December 1913.

84. Recommendations of the Ohio school survey on certification of teachers. Ohio teacher, 34: 197–98, December 1913.

85. **Schaeffer, Nathan C.** The dead line. Some teachers die before they are ready for burial. Pennsylvania school journal, 62: 284–87, January 1914.

Claims that in the vocation of teaching lapse of study means lapse of efficiency and ultimately innocuous desuetude, if not mental stagnation for both teachers and pupils.

86. **Victoria university of Manchester, Department of education.** The demonstration school record no. II. The pursuits of the Felden school. Ed. by J. J. Findlay. Manchester, University press, 1913. xxxiii, 283 p. front., plates. 8°. (Publications of the University of Manchester, no. LXXV. Educational series. no. VII)

87. **Young, Rose.** Guilty of motherhood. Good housekeeping magazine, 58: 27–35, January 1914.

Married women as teachers. Conditions in schools of New York city.

HIGHER EDUCATION.

88. **Berendsohn, Walter A.** Von den studentischen gemeinschaft im amerikanischen college. Akademische rundschau, 2: 162–7, December 1913.

An interesting and discriminating statement of certain phases of student life at American colleges.

89. **Boutroux, Émile.** Science et culture. Revue internationale de l'enseignement, 33: 385–401, December 1913.

An address delivered at the inauguration of the Graduate college of Princeton university, October 21, 1913.

90. **Dabney, Charles W.** A study of the student body of the University of Cincinnati: a municipal university. National municipal review, 3: 68–77, January 1914.

91. **Davidson, Norman J.** Things seen in Oxford. London, Seeley, Service & co. limited, 1914. 258 p. illus. 16°.

92. **Draper, Ernest G.** The college man in business. Outlook, 106: 27–30, January 3, 1914.

Conclusions drawn from a typical class in two typical institutions—Yale university (class of 1906), and Amherst college (class of 1906).

93. **Gribble, Francis.** The romance of the Cambridge colleges. London, Mills & Boon, limited, 1913. 268 p. illus. 12°.

94. **Hart, Joseph K.** The democratic organization of a state university. Popular science monthly, 84: 91–99, January 1914.

Advocates among other things a larger recognition of the student body. Says: "In all questions affecting the real policy of the university the student body must have a chance to express its deliberate will in a democratic sort of way." The problem of the democratic participation by the faculty in the actual affairs of the university must also be solved.

95. **Hibben, John G.** The type of graduate scholar. Educational review, 47: 1-9, January 1914.

Discusses the determining forces in the academic world to-day, which tend "to constitute a definite type of graduate student."

96. **Johnston, J. B.** University organization. Science, n. s. 38: 908–18, December 26, 1913.

Discusses what the writer considers to be the proper form of university organization, and how it can be approached in our state universities.

97. **Jones, Adam Leroy.** The work of the committee on undergraduate admissions. Columbia university quarterly, 16: 27–39, December 1913.

To be concluded.

98. **Jones, E. E. Constance.** Girton college. London, A. & C. Black, 1913. 63 p. illus. 8° (Beautiful Britain series)

99. **Lowell, A. Lawrence.** Measurements of efficiency in college. Journal of education, 78: 851–52, December 25, 1913.

Address before the New England association of colleges and preparatory schools.

100. **Matthews, W. K.** Some features of higher education in Germany. Methodist review, 63: 74–90, January 1914.

Concludes that the school system and the methods of instruction in Germany are calculated to beget dependence on authority rather than independence and freedom of action.

101. **Perrott, George St. John.** Reminiscences of Oxford. Quarterly journal of the University of North Dakota, 4: 154–63, January 1914.

An account of experiences at Oxford "by one of her sons."

102. **Salisberg, Paul von.** Deutsche kulturarbeit im ausland. 1. Das Deutsch-Südamerikanische institut. Hochschul-nachrichten, 24: 39–40, November 1913.

Describes the "German South-American institute," a German educational organization with branches in most of the South American states. The Institute has close affiliations with the University of Bonn and the Technical school at Aachen.

103. **Stearns, Harold E.** The confessions of a Harvard man. Forum, 51: 69–81, January 1914.

Concluded from December number. Harvard life from the inside. Criticises what he terms "the lack of vigorous intellectual discipline." Thinks a general culture is still a man's best training for any special work. Deplores "the steady growth of modern utilitarian ideals at Harvard."

104. **Stevens, W. LeConte.** Academic student elections. Science, n. s. 39: 91–94, January 16, 1914.

Observations on F. C. Ferry's article, Some tables of student hours of instruction, in Science, n. s. 38: 584–89, October 24, 1913.

105. **Venn, John.** Early collegiate life. Cambridge, W. Heffer and sons ltd., 1913. 286 p. 12°.

Relates to Gonville and Caius college, Cambridge university.

SCHOOL ADMINISTRATION.

106. **Dutton, Samuel T.** The investigation of school systems. Educational review, 47: 57–64, January 1914.

Writer says: "Instead of appointing a commission to report publicly on city schools, it would seem far better to choose some one or two very competent persons as advisors to the school system, say for a period of five years, giving them proper salary and letting them make confidential reports to the board, from time to time, on such matters as seem to them to need special attention . . . It would prevent the exploitation of personal opinions and that playing to the galleries which is so likely to occur, etc."

107. **Great Britain. Board of education. Office of special inquiries and reports.** Memorandum on compulsory attendance at school in certain European countries and American states. London, Printed under the authority of H. M. Stationery office, by Eyre and Spottiswoode, ltd., 1913. 75 p. 8°. (Imperial education conference papers. II)

108. **Meade, George H.** A heckling school board and an educational stateswoman. Survey, 31: 443–44, January 10, 1914.

Discusses the re-election of Mrs. Ella Flagg Young as superintendent of schools of the city of Chicago.

109. **Weet, Herbert S.** Elimination, retardation, and non-promotion. American school board journal, 48: 9–11, 65, January 1914.

"This paper, which formed the basis of an extended discussion before the New York Council of superintendents, presents one of the first working schemes for reducing retardation, etc., which has been found practical."

SCHOOL MANAGEMENT.

110. **Gill, Wilson L.** The boys' and girls' republic; text-book of the art of citizenship. Philadelphia, American patriotic league [1913] 100 p. illus. 12°.

111. ——— A new citizenship. Democracy systematized for moral and civic training. Philadelphia, American patriotic league [1913] 268 p. illus. 12°.

Introduction by Patterson Du Bois.

The book undertakes to show how pupil self government has been developed and successfully applied, and how the work which has already become both national and international may be further developed.

112. **Lugg, Charles H.** Home work and the school. South Dakota educator, 17: 8–10, December 1913.

The author believes in home tasks for pupils to a limited extent, but thinks they should be such that they will chime in with the interests and the harmonies of the home life.

113. The use of a score card in appraising class work. School review, 22: 57–60, January 1914.

Gives samples of cards.

SCHOOL ARCHITECTURE.

114. **Keene, Charles H.** The effect of conditions of schoolroom heating and ventilating on schoolroom attendance. School review, 22: 20–25, January 1914.

Conditions in Buffalo, N. Y., described. Makes a plea for thorough ventilation. Shows what has been accomplished by open-air schools.

115. **Winslow, C. E. A.** School ventilation in New York city. American journal of public health, 3: 1158–75, November 1913.

Results of a study of existing atmospheric conditions in the schools, made by Prof. Charles Baskerville and the writer, as a part of the New York school inquiry. Thirty-two typical examples of schools were selected for examination.

SCHOOL HYGIENE AND SANITATION.

116. **Burnham, William H.** Mental hygiene in the school. Mind and body, 20: 387–91, January 1914.

Read at the fourth International congress on school hygiene, August 1913, at Buffalo, N. Y.

117. **Foster, N. K.** The Oakland system of medical supervision. American education, 17: 208–11, December 1913.

118. **Greenwood, Arthur.** The health and physique of school children. Westminster, P. S. King & son, 1913. xv, 96 p. tables, charts. 8°.

An anthropometric study of British school children, published by the Ratan Tata foundation, School of economics, University of London.

119. **Kohnky, Emma.** Preliminary study of the effect of dental treatment upon the physical and mental efficiency of school children. Journal of educational psychology, 4: 571–78, December 1913.

"The method of equal groups was employed and check tests were made upon children of the same ability who had no dental treatment. The gain of the treated group constitutes a strong argument in favor of the extension of dental treatment in the schools."

120. **McKeag, Anna Jane.** The conservation of the child's energy. Child-welfare magazine, 8: 163–66, January 1914.

It is the purpose of this article to point out some of the facts that have been discovered in the last two decades in regard to methods of utilizing to the best advantage the powers and energy of the child in the schoolroom.

SEX HYGIENE.

121. **Foerster, F. W.** The sense of shame. Do sex crusaders forget its importance? Pennsylvania school journal, 62: 247–49, December 1913.

Reprinted from the Philadelphia Ledger.

122. **Hahn, Clarence W.** Sex education for school children. School science and mathematics, 14: 54–63, January 1913.

Outlines a course for sex education.

PLAY AND PLAYGROUNDS.

123. **Playground and recreation association of America.** Year book. Playground, 7: 371–409, January 1914.

Gives statistics of the cities that "played" last year.

SOCIAL ASPECTS OF EDUCATION.

124. **Elliott, Edward C.** The schoolhouse as a crime contributor. Bulletin of the American academy of medicine, 14: 383–87, December 1913.

By "schoolhouse" the writer means "the entire complex of material surroundings and physical arrangements making up the immediate environment of the typical public school." Urges use of school buildings for civic and social purposes. Writer has reference to the increasing number of non-social offenses and not to criminal tendencies usually recognized as such by the law.

125. **Macadam, Elizabeth.** The universities and the training of the social worker. Hibbert journal, 12: 283–94, January 1914.

Describes conditions in England. Says that funds are needed for endowments to establish schools for social science on a sound basis.

126. New Year goals in social work . . . 1914. Survey, 31: 349–59, December 27, 1913.

Reviews the prospective programmes of social organizations for the year 1914. Discusses child labor, recreation, social settlements, vocational education, sex education, mental hygiene, etc

127. **Perry, Clarence Arthur.** The social centers of 1912–13. New York, Department of recreation, Russell Sage foundation [1913] 8 p. illus. 8°. (Publication no. Rec. 135)

Presents information regarding "practically all of the cities which had definite undertakings of a social center character" during the year.

128. **Shields, Thomas Edward.** An international movement for home education. Catholic educational review, 7: 48–56, January 1914.

The author speaks especially of the Fourth International congress for home education to be held in Philadelphia, September 1914.

CHILD WELFARE.

129. The uplift book of child culture; by Orison Swett Marden, Jenny B. Merrill, Ben B. Lindsey, Alice R. Northrop, Gustave A. Blumenthal, Eli W. Weaver. Philadelphia, Pa., Uplift publishing company [1913] xi, 425 p. illus. 8°.

Covers a wide range of juvenile interests—intellectual, physical, moral, vocational, etc.

130. **Waite, Edward F.** The physical basis of crime: from the standpoint of the judge of a juvenile court. Bulletin of the American academy of medicine, 14: 388–95, December 1913.

Recommends medical inspection of schools, etc.

MORAL AND RELIGIOUS EDUCATION.

131. **Cope, Henry F.** Co-operation on the campus. Religious education, 8: 441–46, December 1913.

Gives a possible ideal of co-ordination in religious work based on the four factors of the university, the local church, the church worker, and the Christian association.

132. **Elliott, Harrison S.** A suggested curriculum for voluntary Christian education groups in colleges and universities. Religious education, 8: 463–69, December 1913.

"Tentative report of a Committee of the Council of North American student movements, with the co-operation of various leaders acquainted with the student field."

133. **Frayser, Nannie L.** Relating the child to the community through the school. Pilgrim teacher, 30: 84–88, February 1914.

Sunday school work. Newer methods of instruction described.

134. **Johnson, Franklin W.** The problems of boyhood: a course of ethics for boys in the Sunday school. Biblical world, 43: 29–32, January 1914.

135. **Kent, Charles Foster.** The Bible and the college curriculum. Religious education, 8: 453–58, December 1913.

Gives the proposed college curriculum courses.

136. [Symposium on the educational, religious, and social activities of the Young men's Christian association] Association men, 39: 169–210, January 1914.

MANUAL AND VOCATIONAL TRAINING.

137. **Abercrombie, John W.** Vocational education. Speech in the House of representatives, October 2, 1913. Washington, Government printing office, 1913. 16 p. 8°.

With reference to the proposed joint resolution providing for the appointment of a commission to consider the need and report a plan for national aid for vocational education.

138. **Adkins, Frank J.** A counterblast against vocationism. School world, 16: 9–12, January 1914.

139. **Black, Ryland M.** The cultural element in vocational training. American schoolmaster, 6: 449–56, December 1913.

Address before a recent meeting of the North Dakota teachers' association.

140. **Fuller, Robert J.** Cooperation between the National education association and the National society for the promotion of industrial education. School review, 22: 12–19, January 1914.

141. **Henderson, Wilson H.** A program for vocational education. Industrial-arts magazine, 1: 6–8, January 1914.

Claims that in the program for vocational education, there is no one unit, scheme or course which will, by itself, solve the problem. The vocational school, continuation school, and co-operative school and shop course each has its place, and it has been the purpose of this article to show their relative values as agents in the solution of the problem.

142. **Matterson, Emma B.** Shall we teach household arts in our schools? Education, 34: 312–15, January 1914.

143. **Offenhauer, R. E.** Vacation earnings of high school boys. Ohio educational monthly, 62: 625–26, December 1913.

Gives statistics showing the labor and earnings of the high school boys of Sandusky, Ohio, for the vacation period of 1913.

144. **Richards, Charles R.** How shall we study the industries for the purposes of vocational education? Vocational education, 3: 159–68, January 1914.

A valuable study in which the author "points out the ends to be sought in making a survey of the industries of a community and gives a form of classification for securing the desired result."

145. **Roberts, William M.** The development of part-time education for apprentices in Chicago. Vocational education, 3: 197–207, January 1914.

A paper read at the seventh annual convention of the National society for the promotion of industrial education, Grand Rapids, Michigan, October 1913.

The Chicago experiments would seem to be especially suggestive to other cities, owing to the working agreements, which have been brought about between the labor unions and employers in the effort to solve the problem of apprentice training.

146. **Short, R. L.** The West technical high school of Cleveland, Ohio. School journal, 81: 42–43, December 1913.

147. **Wight, John G.** Vocational training in village schools. School journal, 81: 47–49, December 1913.

"Vocational training in city and rural schools has been duly considered. But there are considerable village populations that are neither urban nor rural. Some of the peculiar problems of vocational training in such communities are here discussed by the late Doctor Wight."—Editors.

PROFESSIONAL EDUCATION.

148. **Babcock, Kendric Charles.** Preliminary training for entrance into medical schools. Quarterly of the Federation of state medical boards of the United States, 1: 130–34, January 1914.

149. **McLeod, J. J. R.** The teaching of physiology to medical students. Science, n. s. 39: 51–59, January 9, 1914.

Employs the term "physiology" in the broad sense—to include the physical, the purely biological and the chemical phenomena of life.

150. **Moore, Veranus A.** The New York state veterinary college at Cornell university. Science, n. s. 39: 14–17, January 2, 1914.

151. **Osler, William.** Examinations, examiners, and examinees. Quarterly of the Federation of state medical boards of the United States, 1: 101–14, January 1914.

An address delivered at the opening of the winter session of St. George's Hospital Medical School on October 1, 1913.

152. **Register, Layton B.** A Paris law school examination. University of Pennsylvania law review, 62: 187–90, January 1914.

Methods of examination at the law school of the University of Paris for degree of *licence en droit*—bachelor of laws.

EDUCATION OF WOMEN.

153. **Beyer, Thomas P.** Creative evolution and the woman question. Educational review, 47: 22–27, January 1914.

Writer contends that "feminism and its entering-wedge, woman suffrage, do not promise heaven, but mutilation for the race."

154. **Courtney, Janet E.** Women as brain-workers. Nineteenth century, 74: 1284–93, December 1913.

Discusses the education of women and their work in the world.

155. **Grant, Cecil** *and* **Hodgson, Norman.** The case for co-education. London, Grant Richards ltd., 1913. 325 p. 12°.

The favorable conclusions of the authors are based upon the results of the English experiment in coeducation at Keswick, and subsequently at St. George's, Harpenden, extending over 15 years. Two chapters on the Experience of America, p. 159–200, are included.

156. **Hollingworth, Leta Stetter.** Variability as related to sex differences in achievement; a critique. American journal of sociology, 19: 510–30, January 1914.

157. **Hylla, E.** Der unterschied der geschlechter und seine bedeutung für die jugenderziehung. Deutsche schule, 17: 782–90, December 1913.

A summary of the discussions on coeducation at the 1913 meeting of the League for school reform.

158. **Misme, Jane.** L'éducation physique des femmes en France. Revue, 24: 501–7, December 1913.

159. **Munford, Mary C. B.** The co-ordinate college. The state's need of it. Its relation to the university and our system of public education. Virginia journal of education, 7: 152–53, January 1914.

Tells of the demand in Virginia for a co-ordinate college for women affiliated with the State university at Charlottesville.

160. **Thwing, Charles Franklin.** Notes on the history of the College for women of Western reserve university for its first twenty-five years, 1888–1913. Cleveland, O., The Western reserve university press, 1913. 60 p. incl. front. 2 pl. 8°.

Cover-title: The co-ordinate system in the higher education.

EXCEPTIONAL CHILDREN.

161. **Barnett, Mary G.** Young delinquents: a study of reformatory and industrial schools; with an introduction by Sir John Gorst. London, Methuen & co. ltd. [1913] xiv, 222 p. 12°.

The result of frequent attendances at children's courts, and of visits to some 20 or 30 schools in England. Contains a résumé of the report of the Departmental committee of 1911, p. 179–201.

162. **Hartwell, E. C.** A small city's experiment with unusual children. American school board journal, 48: 15, January 1914.

Describes an experiment made during the past three years in the schools of Petoskey, Michigan.

163. **McMurtrie, Douglas C.** Bibliography of the education and care of crippled children. A manual and guide to the literature relating to cripples, together with an analytical index. 1st ed. New York, D. C. McMurtrie, 1913. xii, 99 p. 8°.

164. **Rogers, A. C.** The desirability of early diagnosis of mental defect in children, and mental tests as an aid. Journal of the American medical association, 61: 2294–97, December 27, 1913.

Gives tests for defective children; the Binet-Simon method. Distinguishes mental deficiency in children, and like curable conditions, from insanity. Classification of defectives.

LIBRARIES AND READING.

165. **Bostwick, Arthur E.** The making of an American's library. IV. The boy and the book. Bookman, 38: 531–37, January 1914.

166. **Hassler, Harriot E.** School reading lists, correlated with the course of study in the public schools of the city of New York. Grades 3–8. Queens borough public library bulletin, 2: 4–16, November 1913.

167. **Johnston, William Dawson.** The library as a university factor. Library journal, 39: 10–15, January 1914.

Address delivered November 7, 1913, at the meeting of the Association of American universities, held at the University of Illinois, Urbana, Ill.

168. **National council of teachers of English.** Report of the Committee upon home reading. November, 1913. Chicago, Ill., National council of teachers of English, 1913. 16 p. 8°.

Contains a classified list of books for home reading of high-school pupils.

BUREAU OF EDUCATION: RECENT PUBLICATIONS.

169. Consular reports on industrial education in Germany. Washington, 1913. 75 p. (Bulletin, 1913, no. 54)

CONTENTS.—I. The system of industrial schooling.—II. Schools for builders.—III. Preparatory courses for master craftsmen.—IV. "Meisterkurse" at Frankfort on the Main.—V. The Trade institute at Cologne.—VI. Schools for fruit-growing.

170. Education of the immigrant. Abstracts of papers read at a public conference under the auspices of the New York-New Jersey committee of the North American civic league for immigrants, held at New York city, May 16 and 17, 1913. Washington, 1913. 52 p. (Bulletin, 1913, no. 51)

171. The Farragut school, a Tennessee country-life high school; by A. C. Monahan and Adams Phillips. Washington, 1913. 23 p. plates. (Bulletin, 1913, no. 49)

172. The Fitchburg plan of cooperative industrial education, by Matthew R. McCann. Washington, 1913. 28 p. plates. (Bulletin, 1913, no. 50)

173. Sanitary schoolhouses. Legal requirements in Indiana and Ohio. Washington, 1913. 40 p. (Bulletin, 1913, no. 52)

NEW PERIODICALS.

Arkansas teacher. Vol. 1, no. 1, January 1913. 10 numbers a year. Conway, Ark.

Hawaii educational review. Vol. 1, no. 1, January 1913. 10 numbers a year. Honolulu, Hawaii.

High school quarterly. Vol. 1, no. 1, October 1912. Published quarterly. University of Georgia, Athens, Ga.

Illinois teacher. Vol. 1, no. 1, April 1913. Published monthly. Illinois state teachers' association, Woodstock, Ill.

Industrial-arts magazine. Vol. 1, no. 1, January 1914. Published monthly. Bruce publishing company, Milwaukee, Wis.

Louisiana school work. Vol. 1, no. 1, April 1913. Published monthly, except July and August. Baton Rouge, La.

Mid-west quarterly. Vol. 1, no. 1, October 1913. Published quarterly. University of Nebraska, Lincoln, Nebr.

Rural educator. Vol. 1, no. 1, January 1913. Published monthly. Ohio state university, Columbus, Ohio.

Storytellers' magazine. Vol. 1, no. 1, June 1913. Published monthly. New York, N. Y.

Vocationist. Vol. 1, no. 1, October 1912. Published quarterly. Oswego, N. Y.

PERIODICALS INDEXED IN THIS NUMBER.

Akademische rundschau, Leipzig, Germany.
American education, 50 State street, Albany, N. Y.
American journal of sociology, University of Chicago press, Chicago, Ill.
American journal of public health, 289 Fourth avenue, New York, N. Y.
American review of reviews, 30 Irving place, New York, N. Y.
American school board journal, 129 Michigan street, Milwaukee, Wis.
American schoolmaster, State normal school, Ypsilanti, Mich.
Archiv für pädagogik, Leipzig, Germany.
Arkansas teacher, Conway, Ark.
Association men, 124 East Twenty-eighth street, New York, N. Y.
Atlantic monthly, 4 Park street, Boston, Mass.
Biblical world, University of Chicago press, Chicago, Ill.
Bookman, Fourth avenue and Thirtieth street, New York, N. Y.
Bulletin of the American academy of medicine, Easton, Pa.
Bulletin of the Society for the promotion of engineering education, Lancaster, Pa.
Catholic educational review, Washington, D. C.
Catholic school journal, Milwaukee, Wis.
Child-welfare magazine, 227 South Sixth street, Philadelphia, Pa.
Columbia university quarterly, Columbia university press, New York, N. Y.
Delineator, Butterick publishing company, New York, N. Y.
Deutsche schule, Leipzig, Germany.
Education, 120 Boylston street, Boston, Mass.
Educational bi-monthly, Board of education, Chicago, Ill.
Educational review, Columbia university, New York, N. Y.
Elementary school teacher, University of Chicago press, Chicago, Ill.
English journal, University of Chicago press, Chicago, Ill.
Forum, 2 East Twenty-ninth street, New York, N. Y.
Good housekeeping magazine, 381 Fourth avenue, New York, N. Y.
Hibbert journal, London, England, and 6 Beacon street, Boston, Mass.
High school quarterly, University of Georgia, Athens, Ga.
History teacher's magazine, McKinley publishing company, Philadelphia, Pa.
Hochschul-nachrichten, Munich, Germany.
Industrial-arts magazine, Bruce publishing company, Milwaukee, Wis.
Journal of education, 6 Beacon street, Boston, Mass.
Journal of educational psychology, Warwick & York, inc., Baltimore, Md.

Journal of geography, Madison, Wis.
Journal of the American medical association, 535 Dearborn street, Chicago, Ill.
Kindergarten review, Springfield, Mass.
Lehrerin, Leipzig, Germany.
Library journal, 141 East Twenty-fifth street, New York, N. Y.
Methodist review, Smith & Lamar, Nashville, Tenn.
Mid-west quarterly, University of Nebraska, Lincoln, Nebr.
Mind and body, Herold building, Milwaukee, Wis.
National municipal review, North American building, Philadelphia, Pa.
New England magazine, 221 Columbus avenue, Boston, Mass.
Nineteenth century, London, England.
Normal instructor, Dansville, N. Y.
Ohio educational monthly, Columbus, Ohio.
Ohio teacher, Box 326, Athens, Ohio.
Oklahoma school herald, Oklahoma City, Okla.
Outlook, 287 Fourth avenue, New York, N. Y.
Pädagogische warte, Leipzig, Germany.
Pädagogische zeitung, Berlin, Germany.
Parents' review, London, England.
Pedagogical seminary, Worcester, Mass.
Pennsylvania school journal, Lancaster, Pa.
Pilgrim teacher, 14 Beacon street, Boston, Mass.
Playground, 1 Madison avenue, New York, N. Y.
Popular educator, 50 Bromfield street, Boston, Mass.
Popular science monthly, Substation 84, New York, N. Y.
Primary education, 50 Bromfield street, Boston, Mass.
Quarterly journal of the University of North Dakota, University, N. Dak.
Quarterly of the Federation of state medical boards of the United States, Easton, Pa.
Queens borough public library bulletin, Jamaica, N. Y.
Religious education, 332 South Michigan avenue, Chicago, Ill.
Revue, Paris, France.
Revue internationale de l'enseignement, Paris, France.
Revue pédagogique, Paris, France.
Rivista d'Italia, Rome, Italy.
School, Bloor and Spadina, Toronto, Canada.
School and home education, Bloomington, Ill.
School-arts magazine, 120 Boylston street, Boston, Mass.
School bulletin, Syracuse, N. Y.
School century, Oak Park, Ill.
School journal, 31–33 East Twenty-seventh street, New York, N. Y.
School news and practical educator, Taylorville and Chicago, Ill.
School review, University of Chicago press, Chicago, Ill.
School science and mathematics, Mount Morris, Ill.
School world, London, England.
Science, Substation 84, New York, N. Y.
South Dakota educator, Mitchell, S. Dak.
Survey, 105 East Twenty-second street, New York, N. Y.
Texas school magazine, 1304 Commerce street, Dallas, Tex.
Training school bulletin, Vineland, N. J.
University of Pennsylvania law review, Philadelphia, Pa.
Virginia journal of education, Richmond, Va.
Vocational education, Manual arts press, Peoria, Ill.

BULLETIN OF THE BUREAU OF EDUCATION.

[NOTE.—With the exceptions indicated, the documents named below will be sent free of charge upon application to the Commissioner of Education, Washington, D. C. Those marked with an asterisk (*) are no longer available for free distribution, but may be had of the Superintendent of Documents, Government Printing Office, Washington, D. C., upon payment of the price stated. Remittances should be made in coin, currency, or money order. Stamps are not accepted. Documents marked with a dagger (†) are out of print.]

1906.

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†No. 3. List of publications of the United States Bureau of Education, 1867–1910.
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1911.

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1913.

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*No. 2. Training courses for rural teachers. A. C. Monahan and R. H. Wright. 5 cts.
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No. 55. Legislation and judicial decisions relating to education, October 1, 1909, to October 1, 1912, James C. Boykin and William R. Hood.
No. 56. Some suggestive features of the Swiss school system. William Knox Tate.
No. 57. Elementary education in England, with special reference to London, Liverpool, and Manchester. I. L. Kandel.
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No. 59. Bibliography of education for 1910-11.
No. 60. Statistics of State universities and other institutions of higher education partially supported by the State, 1912-13.

1914.

No. 1. Monthly record of current educational publications, January, 1914.
No. 2. Compulsory school attendance.

UNITED STATES BUREAU OF EDUC
BULLETIN, 1914, NO. 4 - - - - - - - - WHOLE N

THE SCHOOL AND THE START IN

A STUDY OF THE RELATION BETWEEN SCHOOL
AND EMPLOYMENT IN ENGLAND,
SCOTLAND, AND GERMANY

By MEYER BLOOMFIELD
DIRECTOR OF THE VOCATION BUREAU
BOSTON, MASS.

DEPARTMENT OF THE INTERIOR

WASHINGTON
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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, December 2, 1913.

SIR: Not only does society attempt to prepare its youth for life, for making a living and for effective service; it also attempts to direct them, at the end of their school period, toward those vocations to which they seem to be best fitted and to assist them in finding profitable employment. In more than one American city this is considered a legitimate function of the system of education. Because of increasing interest in this subject, I have asked Mr. Meyer Bloomfield, director of the Vocation Bureau of Boston, to prepare for this bureau the manuscript submitted herewith, embodying the results of the study of the relations of the school and employment in England, Scotland, and Germany.

I recommend that it be published, under the title "The School and the Start in Life," as a bulletin of the Bureau of Education.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

To the SECRETARY OF THE INTERIOR.

ACKNOWLEDGMENT.

In the present study the writer has received so much cooperation wherever he sought the assistance of school officials, business men, labor-exchange committees, social workers, teachers, labor-union members, and Government authorities that it is quite impossible to name all who have helped him. Nevertheless, special thanks are due to the Director of Education in Liverpool; to Mr. Horace Washington, the American consul; and to Mr. Mavor, a public-spirited manufacturer; to the Glasgow School Board and the Labor Exchange officials; to the Edinburgh School Board, the Organizer of Continuation Classes, the Labor Exchange officials, and to the Rev. William Main; to the Hon. Arnold Rowntree, M. P., and Mr. Crichton, of York; to Mr. Arthur Greenwood, of the Huddersfield Technical College, and to Mrs. Ogilvie Gordon, of Aberdeen, for valuable papers and many suggestions; to Mr. Norman Chamberlain and members of the education committee of Birmingham; to Mr. Frederick Keeling, of London; Mr. Cyril Jackson, of the London County Council; Mr. E. G. Reiss, honorable secretary of the apprenticeship and skilled employment association; Hon. Percy Alden, M. P.; Mr. E. J. Pickles, of the West Bromwich Education Committee, whose personal help was of great value; Miss Burnet, of the central juvenile advisory committee of London; Mr. Reginald Bray, of the Camberwell Green local advisory committee; Sir George Newman, chief medical officer of the board of education; Mr. W. R. Davies; and Mr. Arnold Freeman. Dr. Halliwell, medical officer and factory surgeon of Dewsbury, spent many hours in going over the medical-service material contributed by Sir George Newman and himself. Hon. W. H. Beveridge and Mr. S. G. Tallents, respectively director and secretary of the board of trade labor exchanges, gave generously of their time.

Dr. Kerschensteiner, of Munich, and Dr. Albert Sudekum, of Berlin, both members of the German Parliament, and well known in their fields of education and civic service, made the visit to Germany profitable.

In the compilation of the English bibliography, thanks are due to Mr. Urwick, director of the London School of Economics, and Miss

Elspeth Carr, a graduate student. Likewise for the German bibliography, the writer is indebted to Dr. Sudekum, and Miss Friedlander, his assistant. Dr. Kuczinsky, of Shoneberg, and Dr. Wolff, of Halle, contributed material dealing with the new German movement for parents' consultation hours.

Dr. Claxton, United States Commissioner of Education, encouraged the undertaking of the present study. For assistance in criticising the manuscript the writer is under special obligation to Dr. David Snedden, commissioner of education for Massachusetts, and Prof. Paul H. Hanus, of Harvard University, chairman of the executive board, Boston Vocation Bureau.

THE SCHOOL AND THE START IN LIFE.

A STUDY OF THE RELATION BETWEEN SCHOOL AND EMPLOYMENT IN ENGLAND, SCOTLAND, AND GERMANY.

I. INTRODUCTION.

Within recent years an unusually active interest has been manifested in the after-school careers of the boys and girls who, either through graduation or through dropping out, leave the elementary schools of the United States.

The child-welfare organizations of the country have for many years labored to raise the compulsory school age and to safeguard the moral and physical well-being of young wage earners; social and educational agencies have, through private or through public funds, provided for a limited number of children, whose circumstances or whose natural inclinations pointed to some form of industrial employment, opportunities to enter, by means of preliminary vocational training and help, the higher levels of the occupations.

More recently the vocational guidance movement, with its vocation bureaus, vocational information, placement, scholarship, and follow-up societies, has focused public attention on the hitherto scantily recognized responsibility of the public school for the careers of the children who have left it for employment.

This concern of the schools for the occupational welfare of their boys and girls, new in the sense of the new types of effort which have been organized to help young people find themselves in life, has brought into the foreground certain questions of momentous importance in school policy and administration.

What is the duty of the public school toward the boys and girls who drop out from the elementary grades as soon as they can get a work certificate? What special interest has the school in the kind of work these children find to do? In other words, should there be any further definite relation between the school and the child when the decision to leave is about to be made, or when the child has already left for work? And if so, to what extent shall the school help to provide and supervise employment for such children, or to furnish information, counsel, incentives, and opportunities in order that the start in life for that army of boys and girls now wastefully adrift during the transition from school to work may be made more promising?

These are some of the questions before thinking people not only in this country but in other advanced countries also. They touch not alone the professional interests of the educator and the efficiency requirements of modern industry; they affect the very foundations of our social well-being; they squarely direct attention to a slighted national problem—the conservation of adolescent youth.

Interest in this vital matter has of late been quickening. Significant vocational experiments are under way throughout the country by school boards, teachers' associations, and also by a number of private societies started for the purpose of cooperating with the public schools and their children.

The object of the present study is to describe some of the important enterprises carried on by public and private agencies in England, Scotland, and Germany for the purpose of assisting boys and girls in their start in life. These countries have been selected for special inquiry because their work of vocational assistance, some of it decades old and much of it still in the early stages of experimentation, possesses peculiar interest and suggestiveness for workers in similar fields in the United States. Conditions and even viewpoints will be found so much at variance from our own, oftentimes, that direct adoption of the schemes described will be obviously out of the question. Imitation of the foreign experiment has not been any part of the plan of this inquiry. Genuine social service, as every experienced worker knows, is never a transplantation; it must grow out of local insight and necessity. This, too, should be pointed out: The countries studied differ not only with respect to one another in methods and policies of helping the children vocationally but they differ, too, in many details within the various subdivisions of each country. Scotland does not follow England nor does England follow Germany in the work of vocational assistance. The work in Birmingham is unlike that in London, while Liverpool differs from both. North Germany and south Germany are widely apart in both method and accomplishment.

The reader, in a survey of foreign experiments, can not fail to be impressed by the elaborateness of machinery developed; the extent and effectiveness of the national and local support through legislation and money grants; and also by the extraordinary development of volunteer service on the part of men and women who are drawn from school, manufacturing, commercial, labor, civic, and social-service groups.

II. ENGLAND AND SCOTLAND.

Although various Scotch and English towns have for years been carrying on some kind of juvenile advisory and placement work, frequently through members of the care committees established primarily to supervise school feeding, two parliamentary enactments, one known as the Labor Exchanges Act, passed in 1909, and the other as the Education (Choice of Employment) Act, passed in 1910, may be said to be the mainsprings of the present vocational guidance activities in the United Kingdom. These two acts, with respect to their advising and juvenile employment provisions, have been in process of application simultaneously. Under their authority many important experiments are under way. The separate education act of Scotland became effective in 1908, with the following provisions:

It shall be lawful for a school board, if they think fit, in addition to any powers already vested in them, to incur expenditure and to defray the same out of the school fund, in carrying out or in combining with one or more school boards to carry out the following objects (that is to say): In maintaining or combining with other bodies to maintain any agency for collecting and distributing information as to employments open to children upon leaving school.

The Education (Choice of Employment) Act, 1910.

Chapter 37.

AN ACT To enable certain local education authorities to give boys and girls information, advice, and assistance with respect to the choice of employment. [28th November, 1910.]

Be it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled and by the authority of the same, as follows:

1.—(1) The powers conferred upon the councils of counties and county boroughs as local education authorities under section two of the Education Act, 1902 (in this act called the principal act), shall include a power to make arrangements, subject to the approval of the board of education, for giving to boys and girls under seventeen years of age assistance with respect to the choice of suitable employment, by means of the collection and the communication of information and the furnishing of advice.

(2) The council of a county, and the council of a noncounty borough or urban district within the county who are a local education authority under Part III of the principal act, may, as part of their powers under Part II of that act, enter into and carry into effect arrangements or agreements for the cooperation of the council of the borough or district with the county council in respect of the exercise by the county council of their powers under this act, either—

(*a*) by rendering to the county council such assistance as may be arranged or agreed; or

(*b*) by exercising within the borough or district, on behalf of the county council, all or any of the powers of that council under this act;

and any such arrangement or agreement may, amongst other things, provide for the proportion in which the expenses incurred under it are to be borne by the councils respectively.

(3) The expenses incurred under this act by any council (whether the council of a county, county borough, borough, or urban district) shall be defrayed as part of the expenses of that council under section two or section three of the principal act, as the case may be.

2. This act may be cited as the Education (Choice of Employment) Act, 1910, and this act and the Education Acts, 1870 to 1909, may be cited together as the Education Acts, 1870 to 1910.

Under the Labor Exchanges Act of 1909, the Board of Trade, which combines many of the functions of and corresponds to our Departments of the Interior, Commerce, and Labor, was authorized to make its own regulations for the conduct of these exchanges and to establish such juvenile advisory committees as it thought fit.

Accordingly, the Board of Trade issued the following general regulations and special rules dealing with juvenile employment in England and Wales, and in Ireland:

GENERAL REGULATIONS MADE BY THE BOARD OF TRADE IN PURSUANCE OF SECTION (2) OF THE LABOR EXCHANGES ACT, 1909.

General regulations for labor exchanges managed by the Board of Trade.

I.—(1) Applicants for employment through a labor exchange shall register and shall renew their registration there in person, if they reside within three miles of the exchange or within such other distance as the Board of Trade may direct from time to time, either generally or as regards any specified district or class of applicants.

(2) In the case of applicants not residing within the above limit of distance, the officer in charge of the labor exchange may accept registration or renewal of registration through the post.

(3) Applicants shall register upon a form containing the particulars set forth in the first schedule hereto, subject to such modifications as may be made by the Board of Trade from time to time, either generally or as regards any specified district or trade or class of applicants.

(4) The above regulations shall not apply to juvenile applicants.

II.—Registration of applications for employment shall hold good for seven days from the date of registration or for such other period as the Board of Trade may from time to time direct either generally or as regards any specified district or trade or class of applicants, but may be renewed within that period for a like period and so on from time to time.

III.—(1) Any association of employers or workmen may file at a labor exchange a statement with regard to the existence of a strike or lockout affecting their trade in the district. Any such statement shall be in the form set out in the second schedule hereto, and shall be signed by a person authorized by the association for the purpose. Such statement shall be confidential, except as hereunder provided, and shall only be in force for seven days from the date of filing, but may be renewed within that period for a like period, and so on, from time to time.

(2) If any employer who appears to be affected by a statement so filed notifies to a labor exchange a vacancy or vacancies for workmen of the class affected, the officer in charge shall inform him of the statement that has been filed, and give him an opportunity of making a written statement thereon. The officer in charge in notifying any such vacancies to any applicant for employment shall also inform him of the statements that have been received.

IV.—(1) The officer in charge of a labor exchange in notifying applications for employment and vacancies to employers and applicants, respectively, shall undertake no responsibility with regard to wages or other conditions, beyond supplying the employer or applicant, as the case may be, with any information in his possession as to the rate of wages desired or offered.

(2) Copies or summaries of any agreements mutually arranged between associations of employers and workmen for the regulation of wages or other conditions of labor in any trade may, with the consent of the various parties to such agreements, be filed at a labor exchange, and any published rules made by public authorities with regard to like matters may also be filed. Documents so filed shall be open to inspection on application.

(3) No person shall suffer any disqualification or be otherwise prejudiced on account of refusing to accept employment found for him through a labor exchange where the ground of refusal is that a trade dispute which affects his trade exists or that the wages offered are lower than those current in the trade in the district where the employment is found.

V.—(1) Where an applicant for employment has been engaged through a labor exchange at which he is registered to take up employment at any place removed from the exchange or from his ordinary residence by more than 5 miles by the quickest route, or by such other distance as the Board of Trade may direct from time to time, either generally or as regards any specified district the officer in charge may, at his discretion, make an advance to the applicant toward meeting the expenses of travels ing to the place of employment.

(2) The advance may be made at the request either of the employer or of the applicant. The person at whose request the advance is made shall give such undertaking with respect to the repayment of the advance as the Board of Trade, with the consent of the Treasury, may from time to time prescribe either generally or as regards any specified district or class of applicants.

(3) No advance shall be made where the officer in charge has reason to believe that the employment falls within the terms of Regulation IV (3) hereof.

(4) In making advances care shall be taken to avoid unduly encouraging rural laborers to migrate from the country to the towns or between Great Britain and Ireland.

(5) The advance shall not exceed the amount required to defray the applicant's fare to the place of employment, and will be made by the provision of a ticket or pass, or, in exceptional circumstances, in cash.

VI.—The officer in charge of a labor exchange shall consult the central office in London before notifying to applicants for employment vacancies at any place outside the British Isles.

VII.—(1) There shall be established by the Board of Trade in such areas of the United Kingdom as they think fit advisory trade committees consisting of equal numbers of persons representing employers and workmen in the district and appointed by the Board of Trade after consultation with such bodies and persons as they may think best qualified to advise them on the matter, together with a chairman, agreed upon by a majority both of the persons representing employers and of the persons representing workmen, or in default of such agreement appointed by the Board of Trade.

(2) It shall be the duty of advisory trade committees to advise and assist the Board of Trade in regard to any matters referred to them in connection with the management of labor exchanges.

(3) The members of an advisory trade committee, including the chairman, shall remain in office for three years.

(4) Vacancies, howsoever caused, occurring in the membership or chairmanship of an advisory trade committee, shall from time to time be filled in the same manner as provided by subclause (1) of this regulation in regard to the original appointment of members and chairman. Any person appointed to fill a vacancy shall not hold office after the expiration of the period during which the person in whose place he is appointed would have held office.

(5) At the request of the majority either of the persons representing employers or of the persons representing workmen on an advisory trade committee present at

any meeting, voting on any particular question, shall be so conducted that there shall be an equality of votes as between the persons representing employers and the persons representing workmen, notwithstanding the absence of any member. Save as aforesaid every question shall be decided by a majority of the members present and voting on that question.

(6) On any question on which equality of voting power has been claimed under subclause 5 of this regulation the chairman shall have no vote, but in case of the votes recorded being equal he shall make a report to that effect to the Board of Trade and may also, if he think fit, state his own opinion on the merits of the question.

(7) Subject to these regulations the procedure of any advisory trade committee shall be determined from time to time by the Board of Trade, or by the committee with the approval of the board.

VIII.—(1) All applications for accommodation within the premises of a labor exchange shall be made to the officer in charge of such labor exchange, who shall consult the advisory trade committee for the district. Any such application shall only be granted for such purposes and on such terms and conditions as the committee may approve.

(2) In the case of labor exchanges which were in operation before the passing of the Labor Exchanges Act, 1909, existing arrangements with regard to accommodation may be allowed to continue, except in so far as they may be modified or canceled hereafter.

IX.—Subject to these regulations, special rules may be made from time to time by the Board of Trade, after consulting the board of education so far as regards England and Wales and the Scottish education department so far as regards Scotland and the lord lieutenant of Ireland so far as regards Ireland, with respect to the registration of juvenile applicants for employment; that is to say, applicants under the age of 17 or such other limit as the board may fix, either generally or as regards any specified district or trade or class of applicants.

SPECIAL RULES WITH REGARD TO REGISTRATION OF JUVENILE APPLICANTS IN ENGLAND AND WALES.

Made in Pursuance of Regulation No. IX of the General Regulations for Labor Exchanges Managed by the Board of Trade.

1. Juvenile applicants for employment shall register on the forms prescribed in the schedule to these rules, subject to such modifications as may be made therein by the Board of Trade from time to time. Such applicants, or any prescribed class of such applicants, may be permitted in lieu of attending personally at a labor exchange to register their applications at such other places as may be recognized by the Board of Trade as suitable for the purpose. Forms containing such applications, if transmitted forthwith to a labor exchange, shall be treated as equivalent to personal registration.

2.—(1) Special advisory committees for juvenile employment shall be established in such areas as the Board of Trade may think expedient. These committees shall include persons possessing experience or knowledge of education or of other conditions affecting young persons, appointed after consulting such authorities, bodies, and persons as the board think best qualified to advise them, and also persons representing employers and workmen, appointed after consulting any advisory trade committee established in the district in pursuance of Regulation No. VII of the General Regulations, together with a chairman appointed by the board.

(2) Such labor exchange officers as may be designated by the Board of Trade, and such of His Majesty's inspectors of schools as may be designated by the board of education may be present at meetings of the special advisory committees, but shall not be members thereof.

3. Subject to these rules, the procedure of a special advisory committee for juvenile employment shall be determined from time to time by the Board of Trade or by the committee with the approval of the board.

4. It shall be the duty of a special advisory committee to give advice with regard to the management of any labor exchange in its district in relation to juvenile applicants for employment.

5. Subject to these rules a special advisory committee may take steps, either by themselves or in cooperation with any other bodies or persons, to give information, advice, and assistance to boys and girls and their parents with respect to the choice of employment and other matters bearing thereon. Provided that the Board of Trade and the officer in charge of a labor exchange shall undertake no responsibility with regard to any advice or assistance so given.

6.—(1) If any local education authority for higher education which has or may acquire statutory powers for the purpose of giving advice, information, or assistance to boys and girls with respect to the choice of employment or other matters bearing thereon, submits to the board of education a scheme for the exercise of those powers, and the board of education, after consulting with the Board of Trade, approve that scheme with or without modifications, the foregoing rules shall, so long as the scheme is carried out to the satisfaction of the board of education, apply to the area of that local education authority with the following modifications:

(*a*) The officer in charge of any labor exchange shall not undertake the registration of juvenile applicants for employment except in accordance with the provisions of the scheme.

(*b*) The special advisory committee for juvenile employment shall take no steps under rule 5 except in accordance with the provisions of the scheme.

(*c*) The Board of Trade may, if they think fit, recognize, in lieu of any special advisory committee established or to be established under these rules, an advisory committee constituted under the scheme, provided that such committee includes an adequate number of members possessing experience or knowledge of educational and industrial conditions, and thereupon the Board of Trade may, if the circumstances require, either dissolve any special advisory committee or modify its area and constitution.

(2) Nothing in this rule shall affect the registration at any labor exchange of vacancies for juvenile workers notified by employers.

7. These rules shall apply to the registration of juvenile applicants in England and Wales.

These rules are made by the Board of Trade after consultation with the board of education in pursuance of Regulation No. IX of the General Regulations for Labor Exchanges managed by the Board of Trade.

SCHEDULE TO SPECIAL RULES.

Particulars to be included on the form for registration of juvenile applicants for employment.

Surname.............................. Other names..............................
Date of birth..............................
Full address..............................
Name of last day school and date of leaving..............................
Standard or class in which applicant was on leaving..............................
Whether applicant was a half-timer before leaving, and if so, how long..............
Whether attending or proposing to attend any continuation or technical school, and if so, in what course or subjects, and whether in the day or evening..............

Employment or employments since leaving school:

(1)..

(2)..

(3)..

Employment desired..

Whether willing to be apprenticed, and if so whether a premium can be paid.........

Whether willing to take work at a distance...

Remarks...

The creation by law of the vast placement and advisory machinery under the Board of Trade immediately presented a difficult problem as to the relation of the labor exchange officials and committees to the education authorities, some of which were carrying on juvenile advisory and employment schemes of their own. The problem is not altogether settled yet, although the tact and cooperative spirit on the part of both education and Board of Trade authorities have done much to promote community of service.

The first circulars issued by the two authorities are of interest as showing the nature of the cooperation established at the outset. These pronouncements have largely controlled the local manifestation of vocational assistance under the two acts, although it will be seen later that local initiative has been active even to the point of departure from the injunctions of the main office.

The board of education circular is given first:

CIRCULAR TO LOCAL EDUCATION AUTHORITIES.

Board of Education,
Whitehall, London, S. W., August 17, 1911.

Exercise of Powers under the Education (Choice of Employment) Act, 1910.

Sir:

1. I am directed to refer to the Education (Choice of Employment) Act, 1910, and to the joint memorandum issued by the board of education and the Board of Trade on the 3d January, 1911, with regard to the cooperation between labor exchanges and local education authorities exercising their powers under this act. The board of education desire once more to call the attention of local education authorities to the very great importance of the field of activity open to them under this act. The board have already received a number of more or less detailed proposals from authorities for the exercise of their powers under the act, and they are further well aware that in areas where no definite scheme is as yet in operation much valuable work has been and is being done by voluntary agencies and by individuals in giving advice, information, and assistance to boys and girls during the critical period covering the end of their school career and the beginning and earlier years of their employment. Such activities, however, though widespread, are as yet by no means universal; and in the opinion of the board it is of the first importance that in urban areas, and, where possible, in county areas, local education authorities should take the opportunity afforded by the act of initiating such work where it is not at present carried on, of coordinating and organizing the existing voluntary agencies in a single coherent scheme, and of linking the whole with the work of the juvenile departments of labor exchanges in such a way that the moral and educational influences, which naturally center round elementary schools

and continuation schools, should play their proper part in the transition from school life to the life of adult employment.

2. As is indicated in the joint memorandum of the two boards, it will generally be found desirable, where an authority exercise powers under this act, that the detailed work under the scheme should be intrusted to a special subcommittee of the authority and that this committee should have at their disposal the services of an executive officer. In view of the great importance of the duties of such an officer, and of the necessity for securing thoroughly adequate qualifications, the board are prepared to make annual grants in aid of approved salaries paid to executive officers in respect of duties carried out in accordance with a scheme under section 1 of the choice-of-employment act. The amount of the board's grant will not exceed one-half of the fixed amounts so paid in salaries (or the mean amounts, if the salaries are subject to increments in accordance with a scale approved by the board). and the maximum salaries in respect of which grant will be paid will be determined in accordance with the estimated number of children annually leaving elementary schools within the area or part of an area within which the act is in operation. For this purpose any part of a county forming a separate area for elementary education may, at the discretion of the board, be treated separately. The number of children between 12 and 13 years of age on the admission registers of public elementary schools as returned to the board for 1909 will be taken as the estimated number annually leaving the schools.

The salaries allowed will be as follows:

Number of children between 12 and 13:	Maximum salary in respect of which grant will be paid.
Under 500	£50
500 but less than 1,000	100
1,000 but less than 2,000	200
2,000 but less than 5,000	300
5,000 and over	400

3. It is contemplated that in areas of average size there will be a special officer assigned wholly to this work, and that in the larger areas the chief officer will need the services of an assistant, who should as a rule be a woman. On the other hand, in smaller areas the duties might be discharged by an officer also engaged in other work, while even in large towns it might be found convenient to distribute the duties between two officers engaged for the rest of their time; for example, in work in connection with continuation schools, instead of concentrating the duties in the hands of one officer. In all such cases of part-time employment, the board would require a proportionate part of the total salaries paid to officers so employed to be allocated definitely to work under the choice of employment act. The grant would then be payable, subject to the limitations of the total amounts set out above, in respect of the whole salary of full-time officers or in respect of the proportion of the salary of part-time officers allocated to the purposes of the act, as the case might be.

4. The board fully recognize that in areas of differing size and character the arrangements made for the exercise of powers under the act may vary considerably in points of detail. With a view, however, to assisting authorities who may be considering the matter, they have prepared a draft-outline scheme such as might be used in a county borough of average size; a copy of this scheme is appended to this circular. It is not intended to be in any way exhaustive, and substantial modifications of its provisions will probably be necessary or desirable, especially in the largest and smallest areas, and in counties. It is hoped, however, that it may afford some guidance, where this is desired, to authorities in making their arrangements. The board of education are further prepared to send one of their officers to confer personally with any authority desiring such assistance in the discussion or preparation of a scheme under the act.

5. Should a scheme for a county or any part of a county involve the making of arrangements or agreements under section 1 (2) of the act between the council of the county and the council of any borough or urban district being a local education authority for the purposes of elementary education, a draft of the terms of the proposed arrangement or agreement should be submitted to the board with the scheme.

Draft Outline Scheme for the Exercise of Powers under the Education (Choice of Employment) Act, 1910.

1. The authority will exercise their powers under the Education (Choice of Employment) Act, 1910, for giving to boys and girls under 17 years of age assistance with respect to the choice of suitable employment, in accordance with the principles set out in the memorandum with regard to cooperation between labor exchanges and local education authorities, issued by the boards of trade and of education on the 3d January, 1911.

2.—(*a*) For the purpose of the exercise of these powers, the education committee shall appoint a special subcommittee, to be known as the juvenile employment subcommittee, and to be constituted as follows: .... members of the education committee; .... members of ....

[*In constituting the subcommittee provision should be made for securing an adequate number of members possessing experience or knowledge of educational and industrial conditions.*]

(*b*) The divisional officer of labor exchanges for the district and the manager of the ...... labor exchange shall be invited to attend the meetings of the subcommittee, but will not be members thereof.

3. It shall be the duty of the subcommittee, subject to any directions of the education committee—

- (*a*) to arrange for suitable information and advice with regard to the choice of employment to be given to boys and girls, directly or through their parents, both before and after they leave school;
- (*b*) to cooperate with the local labor exchange officers in registering applications of boys and girls for employment, and in selecting applicants for suitable vacancies;
- (*c*) to advise the Board of Trade with regard to the management of the labor exchange in relation to juvenile applicants for employment.

4. In carrying out their duties the subcommittee shall—

- (*a*) take every opportunity of encouraging boys and girls to continue their education after leaving the elementary school;
- (*b*) study the conditions of employments as these affect the prospects of boys and girls and the need and facilities for continued education; for which purpose the officers of the labor exchanges will furnish the subcommittee with all the information in their power with regard to the prospects and conditions of employments;
- (*c*) use as far as possible the services of apprenticeship committees and other organizations for promoting the welfare of boys and girls, and of individual voluntary workers; for which purpose they may, where they think fit, organize care committees or after-care committees of teachers, school managers, and others, whose duty it shall be to keep in individual touch with boys and girls both before and after they leave school.

5. In carrying out its duties the subcommittee shall have at its disposal the services of the director of education, who shall have the assistance of the following officers to be specially appointed for this purpose:

6. The work of the subcommittee in connection with the registration of applications for employment shall be conducted at a central office to be jointly established by the authority and the Board of Trade under the name of the "...... Juvenile Employ-

ment Exchange and Bureau," and to be situated in .... An officer or other representative of the subcommittee shall be regularly available at the exchange and bureau, in order to interview applicants for employment and to confer with the officer in charge of the juvenile work of the labor exchange before the names of applicants are submitted to employers.

7.—(*a*) The head teacher of each day school shall furnish the subcommittee at the exchange and bureau with information as regards the employment obtained by each pupil leaving the school, and with a report as to the character, conduct, and capabilities of the pupil. The subcommittee shall also be furnished with a copy of any report made by a school medical officer on each such pupil, and of any school record or leaving card given to the pupil on leaving.

(*b*) If any pupil has not, within .... before leaving, obtained suitable employment, and the assistance of the committee is desired on his behalf, the head teacher shall forward to the subcommittee an application on the form prescribed in the schedule to the special rules with regard to the registration of juvenile applicants made by the Board of Trade on the 7th of February, 1910, subject to such modifications as may be made therein by the Board of Trade from time to time.

8. Boys and girls desiring employment who have left school, but are below the age of 17, shall apply in person at the exchange and bureau and will be registered by an officer of the labor exchange. This officer will arrange for such applicants to be interviewed by the representative of the subcommittee, either at the time of registration or as soon as possible thereafter, in order that they may be fully advised before vacancies for employment are brought to their notice, and that the desirability of continuing their general education may be impressed upon them.

9. All applications for employment which reach the exchange and bureau either from the schools or from individual applicants shall at once be made available for the use both of the subcommittee and of the officer of the labor exchange.

10. The officer of the labor exchange will be responsible for—

(*a*) bringing the facilities offered by the juvenile employment exchange and bureau and the utility of its work under the notice of local employers;

(*b*) registering all notifications of vacancies received from employers;

(*c*) submitting to employers the names of suitable applicants for vacancies.

11. Before submitting to an employer the name of any applicant for a vacancy notified by that employer, the officer of the labor exchange will in all cases in which it is practicable consult the representative of the subcommittee as to whether the employment offered is suitable for the applicant. He will in no case submit the name of any boy or girl who is in attendance at an elementary or other day school, or has left a day school not more than six months before, without the express consent of the subcommittee's representative. He will also inform the representative of the subcommittee as to the manner in which each vacancy is ultimately filled.

The joint memorandum issued by the Board of Trade and board of education referred to in the preceding circular has laid the foundation of the present relationship between the schools and the juvenile labor exchanges. While one can not say how long the policies laid down in this document will continue in their present form, there being a determined effort on the part of a number of leaders in child-welfare work to secure to the school authorities the exclusive control of the advisory and placement services for those under 17, the probabilities seem to be that for a long time to come the suggestions substantially as outlined in the following memorandum will be in force.

MEMORANDUM WITH REGARD TO COOPERATION BETWEEN LABOR EXCHANGES AND LOCAL EDUCATION AUTHORITIES EXERCISING THEIR POWERS UNDER THE EDUCATION (CHOICE OF EMPLOYMENT) ACT, 1910.

1. We have had under consideration (*a*) the Education (Choice of Employment) Act, 1910, and (*b*) the Special Rules with regard to Registration of Juvenile Applicants in England and Wales made on the 7th February, 1910, by the Board of Trade after consultation with the board of education, under the Labor Exchanges Act, 1909, and printed as an appendix to the present memorandum.[1] Under the new act the councils of counties and county boroughs, as local education authorities, are empowered to make arrangements, subject to the approval of the board of education, for giving to boys and girls under 17 years of age assistance with respect to the choice of suitable employment, by means of the collection and the communication of information and the furnishing of advice. In the special rules of the Board of Trade two alternative methods are indicated by which information, advice, and assistance with respect to the choice of employment and other matters bearing thereon can be given to boys and girls and their parents in connection with the working of labor exchanges. Paragraphs 2 to 5 of the rules make provision for the establishment by the Board of Trade of special advisory committees for juvenile employment, which may, as one of their functions, take steps to give such information, advice, and assistance, but without any responsibility with regard thereto being undertaken by the Board of Trade or the officers in charge of labor exchanges. Paragraph 6 of the special rules contemplates the case of a local education authority which has and desires to exercise statutory powers for the purposes of giving information, advice, and assistance, and provides that, where such powers are exercised in accordance with a satisfactory scheme, the registration of juvenile applicants for employment shall not be conducted by the labor exchange except in accordance with the scheme, and that the Board of Trade may dispense with the services of a special advisory committee so far as the area of the authority is concerned. The enactment of the Education (Choice of Employment) Act, 1910, renders it possible for the procedure contemplated by paragraph 6 of the special rules to be brought into operation.

2. We are of opinion that the employment of juveniles should be primarily considered from the point of view of their educational interests and permanent careers rather than from that of their immediate earning capacities, and accordingly we urge upon local education authorities the desirability of undertaking, in accordance with the principles set out in the present memorandum, the responsibilities offered to them by the new act. We consider that it is of importance that these responsibilities should be exercised in the fullest cooperation with the national system of labor exchanges established under the Labor Exchanges Act, 1909, and the board of education will, therefore, before approving any proposals from local education authorities for the exercise of their new powers, require adequate provision to be made for such cooperation. Where a satisfactory scheme has been brought into force by a local education authority, paragraph 6 of the special rules will operate, and the Board of Trade will be prepared to recognize a committee of the authority as charged with the duty of giving advice with regard to the management of the labor exchange for its area in relation to juvenile applicants for employment. There are certain areas in which, pending the passing of the act, the Board of Trade have already established, or have definitely undertaken to establish, special advisory committees under paragraphs 2 to 5 of the special rules, and we presume that the local education authorities for these areas will desire to continue the arrangements already made, at least until some further experience has been gained, and will consequently defer the exercise of their powers under the act. So far as other areas are concerned, the Board of Trade do not propose to take any steps for the establishment of special advisory committees until after the

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[1] See page 14, "Special rules," etc.

31st December, 1911, except in the event of the local education authority passing a formal resolution to the effect that they do not propose to exercise their powers under the Choice of Employment Act.

3. We recognize that the methods to be adopted by authorities in working the act must necessarily be subject to considerable variations in accordance with local conditions, and will, in particular, be affected by the distribution of the labor exchanges, the districts of which are not necessarily coterminous with the areas of authorities. We think, however, that in normal cases some such arrangements as are indicated in the following paragraphs are likely to be found effective in practice and may be expected to insure a reasonable distribution and correlation of functions between the authorities and the labor exchanges.

4. The work to be undertaken by public bodies in giving assistance in the choice of employment for juveniles may be regarded as having two branches. In the first place there is the task of giving such advice to boys and girls and their parents as will induce them to extend where possible the period of education and to select, when employment becomes necessary, occupations which are suited to the individual capacities of the children and, by preference, those which afford prospects not merely of immediate wages but also of useful training and permanent employment. In the second place, there is the practical task of registering the actual applications for employment and bringing the applicants into touch with employers who have notified vacancies of the kind desired.

5. In any scheme of cooperation put forward under the new act the first of these two tasks—that of giving advice—should, we think, be assigned to the local education authority, with the assistance of such information as to the conditions and prospects of particular kinds of employment as can be furnished by the Board of Trade through the labor exchanges. We think that the authority should act through a special subcommittee, which may, perhaps, also be the subcommittee charged with the supervision of continuation and technical schools, and which should always include an adequate number of members possessing experience or knowledge of industrial as well as of educational conditions. In its detailed working, which should include the keeping in touch with boys and girls after as well as before employment has been found for them, such a subcommittee will, we trust, utilize to the full the services not only of teachers and of school attendance officers, but also of voluntary workers, whose activities may here find one of their most valuable educational spheres; but the work will be of a kind which depends largely upon skilled and effective organization, and it will probably be found desirable, as a rule, to put at the disposal of the subcommittee an executive officer, who will act as its secretary and maintain the daily contact between the authority, the voluntary workers, and the labor exchange.

6. As regards the second of these two tasks, namely, the registration of applications for employment and the selection of applicants to fill vacancies notified by employers, there is need for cooperation between the education authority and the labor exchange, and direct relations should be established between the subcommittee or officer of the authority and the officer in charge of the juvenile department of the labor exchange. For this purpose it will probably be found convenient for the two officers to be located in the same or contiguous buildings. At present a good deal of the work done in connection with the employment of children is done at the elementary and other schools at which the children are in attendance, and no doubt this will continue to be the case, at any rate so far as the giving of advice is concerned; but we desire to point out that the notification of applications for employment to a central office will increase the range of vacancies open to any one applicant and will therefore advance the fundamental object of placing each applicant in the employment which best suits him and to which he is best suited. We contemplate, therefore, that applications for employment from children still at school will continue to be received

and entered upon the necessary cards by their teacher, but that the cards will then, generally speaking, be forwarded by him to the authority's officer. The applications from boys and girls who have left school can, we think, most conveniently be registered by the officer of the labor exchange, but arrangements should be made to admit of such applicants being interviewed by the authority's officer either at the time of registration or as soon as possible after, as it is desirable that they should be fully advised before vacancies for employment are brought to their notice. All applications received in either of the ways indicated should at once be made available either in original or in copies for the use both of the education authority and of the labor exchange. Notifications of vacancies for employment should be made to the officer of the labor exchange, who will furnish the authority's officer with information as to each vacancy for which he proposes to submit a boy or girl, and with the name of any boy or girl whom he proposes to submit for it. Information passing between the authority and the labor exchange will naturally be held to be strictly for the purposes of their cooperation. We anticipate that in ordinary cases the question whether a particular vacancy is suitable for a particular boy or girl will give rise to no difference of opinion between the two officers. It will, however, probably be necessary to provide for the possibility of a difference of opinion. We think, therefore, that as a rule the decision should rest with the authority's representative as regards any child who is still in attendance at an elementary or other day school or has not left the day school more than six months previously, and that as regards applicants who have passed this limit the decision should rest with the officer of the labor exchange, who will, however, consult the authority's representative in all cases in which this is practicable, and will in all cases inform him as to the manner in which each vacancy is ultimately filled.

7. Should any scheme be submitted for the approval of the board of education under the act in which it is proposed to vary these limits or otherwise to depart materially from the scheme of cooperation outlined in this memorandum, it should be accompanied by a full statement of the special reasons urged by the local education authority in support of the proposed variation. The special circumstances of the case will then be considered jointly by the two departments.

The activities of some of the earliest committees appointed in accordance with the joint suggestions just presented may be briefly summarized, details being reserved for the more extended account of the work in several cities to be found in subsequent chapters. This summary is based on the returns to the Board of Trade called for by the following circular to juvenile advisory committee secretaries issued in September, 1911: (The summary follows the circular.)

BOARD OF TRADE LABOR EXCHANGES.

JUVENILE ADVISORY COMMITTEES.

Circular No. 1.

As arranged at the meeting of juvenile advisory committee secretaries on May 29, reports were collected in July from all the committees already formed under rule 2 of the special rules with regard to registration of juvenile applicants in England and Wales, and are reprinted with some amendments in this circular. In addition to the committees referred to below, juvenile advisory committees at Dublin, Belfast, Londonderry, and Bath have now held their first meetings.

The first of these circulars, which it is hoped to issue at intervals of about three months, was intended to be mainly formal, and to serve primarily as a record of the tentative measures already undertaken to secure the special treatment of juveniles by the labor exchanges which the Board of Trade have throughout regarded as necessary. Since, however, the more general aspects of this question appear to be frequently misunderstood, it may be well to preface the first circular with a short historical account of the question.

In section 2 (5) of the Labor Exchanges Act, 1909, provision was made for the appointment of advisory committees; and in Regulation IX of the general regulations for labor exchanges, made on January 28, 1910, power was taken to make special rules with regard to juveniles in consultation with the board of education in England and Wales, the Scotch Education Department in Scotland, and the Lord Lieutenant in Ireland. No special rules have yet been made for Scotland, but special rules were issued for England and Wales on February 7, 1910, and for Ireland on January 11, 1911. Rules 2-5 in each of these sets of rules provide for the establishment of the special advisory committees for juvenile employment with which the present circular is concerned.

In Scotland, however, since the Education (Scotland) Act, 1908, school boards have had power to spend money for purposes closely related to the work of a juvenile advisory committee. It was also known when the special rules for England and Wales were issued that there was a prospect of similar powers being granted to local education authorities in England and Wales; and provision was accordingly made in rule 6 for the recognition by the Board of Trade of work of this kind done by local authorities.

In November, 1910, the Education (Choice of Employment) Act was passed, giving to local education authorities power to make arrangements, subject to the approval of the board of education, for giving to boys and girls under 17 years of age assistance with respect to the choice of suitable employment, by means of the collection and the communication of information and the furnishing of advice; and on January 3, 1911, the president of the Board of Trade and the president of the board of education issued a joint memorandum outlining a scheme which provided for cooperation between local authorities exercising their powers under the new act and the Board of Trade working through the labor exchanges. In this memorandum it was suggested that places where juvenile advisory committees had already been appointed would presumably wish to continue the arrangement already made at least until some further experience has been gained. Local authorities in other places were urged to undertake, in accordance with the principles set out in the memorandum, the responsibilities offered to them by the new act. It was pointed out that it was of the utmost importance that these responsibilities should be exercised in the fullest cooperation with the national system of labor exchanges, and that the board of education would, before approving any proposals from local education authorities for the exercise of their new powers, require adequate provision to be made for such cooperation. It was stated that the Board of Trade would not take steps to establish any further juvenile advisory committees of the existing type until after December 31, 1911, except in places where they had already undertaken to do so or in places formally deciding not to exercise their powers under the Choice of Employment Act. A limited number of schemes under the Choice of Employment Act have been submitted to the board of education for approval, and the first of them has been brought into working order at Birmingham. In the meantime, an interesting arrangement has been made with the Edinburgh school board by which all the juvenile work in Edinburgh is carried on by a labor exchange officer working in the offices of the school board and in cooperation with the school-board officials.

The Board of Trade have from the first recognized that the placing of young persons in employment entailed other considerations than in the case of adults. They recognized that there was need for the provision of advice by experienced persons, and they recognized the essential interest of education authorities in the matter by invariably consulting them with regard to the constitution of juvenile advisory committees. They welcome the increase of powers given to local education authorities by the Choice of Employment Act, and hope that wide advantage will be taken of them on the lines of the joint memorandum in districts where juvenile advisory committees have not been established.

Summary of Some First Reports.

LONDON.

The London juvenile advisory committee has appointed 13 local advisory committees to work in connection with the juvenile section of 13 of the London labor exchanges.

These 13 local advisory committees vary to some extent in their methods, but the following statements apply, generally speaking, to all of them.

They cooperate with teachers through the school care committees appointed by the education authority. Each committee contains two nominees of the local consultative committees of head teachers. The teachers and care committees fill up school-leaving forms for all the children who leave school, whether they have work to go to or not, and forward them to the labor exchanges.

Children are registered at the labor exchange in whose area they live (or to which the school-leaving form has been sent) by the officials or by members of the local advisory committee, or by approved "helpers" of the committee. They are interviewed by small rota committees consisting of two or three members of the local advisory committees, which meet at all hours of the day from 8 a. m. to 8 p. m.

At some exchanges there is a rota meeting every day. At other exchanges "set" rotas meet not more than two or three times a week, but some member of the committee or volunteer calls on most days of the week to assist the paid staff or give advice in cases of difficulty.

Wherever voluntary apprenticeship committees exist, the majority of local advisory committees refer cases of indentured apprenticeship to them.

Boys and girls are advised by the rota committees. The aftersupervisor keeps the subject of continued education before the minds of the young people. The London County Council education committee has drawn up for the use of the local advisory committees special pamphlets for each electoral division giving particulars of all the trade classes (day and evening) in London and all the evening commercial centers and evening schools in each particular division.

The school care committees organize the aftercare in cooperation with philanthropic agencies. The school care committees report to the local advisory committees twice a year or oftener if desired as to each boy and girl placed by the exchange.

The commercial, labor, and statistical department of the Board of Trade has visited several hundred employers in the ready-made women's clothing, the building, and the leather trades, and the information obtained as to each employer is filed at the local exchange. General reports on these trades are also being supplied. The Stepney local advisory committee has issued a circular to employers signed by 20 local employers.

BRISTOL.

A meeting of head teachers and school managers was held in February, 1911, to interest them in the work of the juvenile advisory committee and to gain their cooperation.

A report of every child leaving school is sent in to the secretary. The form for receiving this is attached to the Bristol education committee's school leaving card, which every child receives when leaving school. It is filled up by the head teacher a few days before the actual leaving date and is detached from the card and sent to the secretary, only the address of the labor exchange being left for the child.

This arrangement was made to lessen the work of the head teacher, so that he or she should only have one form to fill up, the slip being part of that one form.

Vacancy lists for girls are sent to the head teachers of the girls' departments every month. The National Union of Teachers has four representatives on the committee. The education committee's "letter to parents" (issued to parents through the head teacher when the child leaves school) has a paragraph on the work of the juvenile advisory committee. A placard has been sent to every head teacher to place in his or her school.

There is at present no cooperation with factory surgeons.

The children are registered at the exchange only. They are encouraged to come if possible when the rota of members is sitting but are also registered at the exchange at any time when the office is open. The teacher's report upon the child is copied onto the back of the registration card.

Members of the juvenile advisory committee attend in rotas of four every Saturday morning at 10 and every Monday afternoon at 3.

Every child is registered first in the usual way by the secretary and all additional information obtained by the rota is kept in an index book of rota interviews.

A list of vacancies, with particulars of each vacancy, is provided for the use of each member of the rota, and when there is a suitable vacancy the child is sent to apply straight away with the usual green card. If there is no suitable vacancy at the moment the child is, of course, encouraged to come again in a few days to the exchange.

The parents of every child leaving school are sent a form on which the days and hours are given when the rotas of members sit.

There are no apprenticeship or skilled employment committees in Bristol. Arrangements are being made to try to gain the cooperation of existing societies which pay premiums for apprentices.

Every effort is made by the rotas of members to urge attendance at evening schools, etc., and the "after-care" visitors also are using all possible influence in that direction.

After-care has just been started, and an "after-care" subcommittee of the juvenile advisory committee has been formed.

To carry out the work Bristol has been divided, according to schools, into five districts. Twelve visitors have been appointed as a start, nine of them being members of the juvenile advisory committee, and the others, Miss Deane (lady supervisor), Miss Tivy (secretary), and one voluntary worker.

To commence operations only the children placed in work since the juvenile advisory committee started work are being visited. It is intended to extend the work, if possible, to every child registering at the exchange.

A card containing all the necessary information about a placed child is given to the visitor, a duplicate copy being kept by the secretary. The report is to be entered on another card, of which the visitor is provided with two copies, one to be retained and the other to be forwarded to the juvenile advisory committee. It is suggested that reports should be sent in once a quarter.

It is intended that the present staff of visitors should suggest for the approval of the "after-care" subcommittee at its next meeting names of other visitors for their respective districts, if possible the names suggested to be those of people already interested in, and with a knowledge of, the district.

No philanthropic agencies have as yet been approached.

A subcommittee for the cooperation of employers has been formed. The standard circular letter to employers has been sent out and followed in some cases by a more personal letter from the chairman.

Books of order forms and forms on which to notify vacancies for apprentices are in use.

Inquiries are being made into local industries and details are being collected with a view to compiling books on somewhat similar lines to those entitled "Trades for London Boys and How to Enter Them," and "Trades for London Girls and How to Enter Them."

The secretaries of the trade unions have been asked to fill in forms giving details of employment in their particular trades, and a good deal of useful information is being got together.

The following suggestion is to be considered by the committee: "Advisability of asking the chamber of commerce to cooperate in the committee's endeavor to increase the attendance of children at continuation schools."

NOTTINGHAM.

Prior to the opening of the labor exchange in Nottingham, the local education authorities had instituted an ex-scholars' employment bureau. This office, together with the efforts of the teachers, resulted in some good work being done. The establishment of the juvenile advisory committee, which includes two nominees of the county education committee, rendered possible the coordination of the work of the various societies dealing with children in the town.

All children are registered at school on a form which provides for the child's inclination, the teacher's view, and the medical officer's report being briefly stated. These particulars are filed on cards at the labor exchange, and are referred to if and when the child applies for employment. The child is given a card report form which it carries with it, and which is demanded by the officials of the labor exchange, evening schools, and elsewhere.

Efforts are made to register children some months before leaving school, and they are advised through their teachers as suitable vacancies are notified to the labor exchange.

All cases of doubt or difficulty either with children or employers are referred to a rota committee of the main committee. These rota committees meet once or twice a week at varying hours, and children attend with their parents to consult the committee. In addition, such members as are able attend during the office hours to inspect and advise on the work and superintend the efforts of the secretary. Complete cooperation with the local education authority has been secured on these lines, while, in addition, the authorities of boy scouts, boys' brigades, boys' and girls' clubs, the charity organization society, and similar organizations regularly submit young children for advice and in other ways assist.

Children's care committees have been set up with the cooperation of the local managers at all the larger schools in the town. It is hoped that such committees will exist shortly at every school. One of these committees has enrolled 50 voluntary visitors, while special visitors are also attached to the juvenile advisory committee.

A letter to employers and an explanatory memorandum were sent out early in the year.

In addition the secretary has addressed a number of meetings in the town.

Employers are canvassed regularly by labor exchange officers, and orders for juveniles are taken on a special form. These forms insure that a great deal of information is available in respect of every juvenile order, and it is in turn passed on to the rota committee or the contents communicated to the children.

Special conditions.—In Nottingham it is possible for children to leave school at the age of 13, providing they have made a certain number of attendances and can prove to the satisfaction of the education committee that they have beneficial and necessary employment.

To prevent, so far as possible, children going into unsuitable situations, each child before he is given an exemption certificate must register at the labor exchange.

If he has not found suitable work for himself and there is none for him at the exchange, he must return to school until a suitable opening comes. In this way it is possible to prevent children running about the streets on the pretense of looking for work.

Special work.—The following subjects have been dealt with by the committee during the last six months:

1. Age at which school children should be registered.
2. Small wages of juvenile workers and the short periods they retain their work.
3. Specialized training for the children in the last year of their school career.
4. Number of children registered under the age of 14.
5. Inquiries into certain trades considered unhealthy and demoralizing for young persons.
6. Report on proposed scheme for classes for unemployed boys, and training centers for girls in trades for which the demand exceeds the supply.
7. Report on number of children who are wage earners while still at school.
8. The committee have under consideration a scheme for cooperation with the certifying surgeon with a view of following up cases rejected by him for physical incapacity.

DEWSBURY.

As each child leaves school the teachers inform the committee on a special form, which gives the name of the firm employing the child and the kind of work to be done.

The certifying factory surgeons for the Dewsbury district report to the committee on every child who is rejected from employment. The secretary then visits each child and obtains for him or her either suitable employment or medical treatment if necessary. Several cases have occurred to show how necessary this work is. One child was found to have been working three months after being rejected by the doctor, and in practically every case where children have been rejected, owing to some defect which a little medical attention would remedy, nothing had been done until the secretary called. Every case notified of this kind is now receiving medical treatment. There should be no difficulty in obtaining the cooperation of certifying factory surgeons in every town where a juvenile advisory committee exists, as many doctors have long recognized the need for some measure of after-care for these children.

The secretary visits every elementary school once in three months to register those children who have reached the age of 12 years and 9 months—that is three months before they can possibly leave school. As Dewsbury is not a very large town, this only means visiting two schools each week. The great advantage of this system of registration is that it brings the secretary into touch with every child about to leave school. When registering the children the secretary is very careful not to suggest employment, but points out the advantages of remaining at school until 14 years of age. Great care has to be taken in this direction, as the fact of registering the children must not be allowed to act as any encouragement to them to leave the elementary schools at 13 years of age. The majority of the children in Dewsbury do leave school at that age, and if the advisory committee did not register the children until they had reached the age of 13, it would be too late to be of any use to them in advising them as to their choice of employment.

A rota meets for this purpose once a month at the labor exchange. Only two meetings have been held so far, but a good number of parents have attended.

(1) *After-care.*—The work of after-care is undertaken by a very excellent "after-care committee" already in existence in Dewsbury. This committee is a school after-care committee and works in cooperation with the school doctor. The organization of this committee is excellent, there being a visitor attached to each school. The secretary of the advisory committee will simply supply to each visitor a list for each school.

(2) *Cooperation with philanthropic agencies.*—The only organization of the kind which has been of any service to the committee yet is the N. S. P. C. C. Their local

inspector is notified in cases of neglect and cruelty, and is able to be of great service, especially with regard to the children rejected from employment by the certifying factory surgeon. When a case occurs where medical treatment is urgently needed and the parents after repeated visits fail to obtain this, the case is reported to the N. S. P. C. C., and usually one visit from their inspector produces the desired effect.

The secretary visits all the large employers in order to enlist their interest and support for the work of the committee. Circulars are also sent out at intervals explaining the objects of the committee.

HUDDERSFIELD.

The head teacher of every senior school in the district is provided with a supply of leaving cards, and the education committee has issued instructions that one is to be filled up and sent to the juvenile advisory committee for every child who leaves school. Teachers are requested to send in the cards at least a fortnight before any child leaves. In order that the first suggestion of leaving shall not come from the teacher to the child, there is a general instruction issued that all children proposing to leave school shall give at least a fortnight's notice to the head teacher. Before filling up the leaving card, teachers can use what persuasion is possible to induce parents to leave their children at school longer.

Meetings of teachers have been held and addressed by the manager of the exchange, who has explained to them the purposes of the advisory committee and asked for their full cooperation. The teachers as a body have expressed their keen sympathy with the work.

The certifying factory surgeons have agreed to supply a periodical list of the children they reject for factory and workshop employment, together with the reasons for their rejection. Special attention will then be devoted to such children.

The school medical officer is also cooperating by giving reports on the physical condition of each child, and has arranged to give a special report on any particular boy or girl when requested.

Immediately on receipt of a leaving card from the school, a circular is sent to the parents of the child, informing them of the objects of the advisory committee and requesting them to consult with the committee as to the placing of their child, or, if that is inconvenient, to send the child to the labor exchange with a special form, which is sent out with the circular, filled up, stating what occupation the parents desire for the child, and some other particulars.

When a boy or girl is actually leaving and application is made personally at the exchange, the registration is entered on the industrial registration card, which is then attached to the school leaving card and placed in the live register and dealt with in the usual manner. Later on these two cards, together with visitors' reports and any other documents relating to the child, are put into a special envelope made for the purpose, which fits into the card register. The whole record of each child is thus kept together.

On every alternate Monday evening a rota of three members of the advisory committee meets at the labor exchange to interview parents. The parents of every child whose leaving card has been received during the fortnight are advised of this rota meeting and are urged to attend and consult the committee. Parents who can not come then may consult the secretary or the manager of the exchange at any time, and they report to the committee. If a child comes at any time without its parents the secretary endeavors as far as possible to ascertain the parents' wishes.

(1) Every head teacher is supposed in the first instance to recommend each child leaving school to continue his or her education at a continuation school, and to suggest suitable courses for the work he or she is likely to enter upon or is specially fitted for.

(2) In sending out the circular to parents on receipt of the leaving card from school the exchange incloses a pamphlet supplied by the education committee giving full details of the continuation classes. The circular states that any further information will readily be supplied at any time.

(3) The committee decided that every boy and girl leaving school should be visited at least once, whether placed through the exchange or not, in order that the advisability of encouraging their children to attend suitable continuation classes might be impressed upon the parents.

(4) The rota committee urges all parents who come before them to attend to the continued education of their children.

(5) The officials at the exchange take every possible opportunity to recommend the continuation schools, and display posters in the waiting rooms.

(6) The after-care visitors are strongly urged to recommend attendance at continuation schools. Arrangements are in hand for next winter session to get reports from time to time of children who are irregular in their attendance at the evening schools, and these will be visited by the after-care visitors.

(7) The after-care visitors are being organized into district committees, each with an evening continuation school as its center, and it will be the duty of each committee to feed that school with boys and girls, and to overlook the attendance and progress of such boys and girls.

(8) Arrangements are being made to insure that one visit shall be paid in September just before the opening of the evening classes to every boy and girl who has left school during the year and to every juvenile registered in the exchange during this year.

(9) At the end of each evening school session a report is sent to the advisory committee on the number of attendances and progress of every boy and girl who has attended the schools. The back of the school leaving card is specially printed and ruled for entering these reports, and if attendance has not been made, or has been irregular, or the progress has been unsatisfactory, after-care visitors can be requested to pay special attention to such cases and endeavor to secure better results in the next session.

(10) It has been found that certain Band of Hope and Sunday school meetings are held on the same evenings as the evening schools are open.

The committee is conferring with the Band of Hope Union, the Sunday School Union, and other bodies responsible, with the hope of avoiding such overlapping in future sessions.

The after-care visitors have been enrolled by the after-care subcommittee of the advisory committee. Special circulars were sent out to all day school teachers, Sunday school teachers, managers of boys' and girls' clubs, scout masters, and any other societies or individuals thought to be interested. Over 100 visitors have thus been enrolled. A card register has been made, each card containing particulars of the cases given to them to report upon and the dates of the reports made. A large number of day school teachers have volunteered for this work.

As explained in no. 5 above, the after-care visitors are being organized into district committees, each with an evening continuation school as a center. Members of the advisory committee will in each case be chairmen of these district committees.

Meetings of the voluntary visitors have been held at the exchange, at which the chairman of the committee and the manager of the exchange explained the work of the advisory committees and instructed the visitors in the work they were required to do.

Arrangements are in hand for a big public conference on after-care work to be held in October, with the Dean of Norwich as principal speaker.

Employers have been approached by special circulars asking for their cooperation with the committee. No need has arisen for special efforts, other than the ordinary methods of the exchange, to get employers to notify vacancies. There are always from 100 to 150 or more vacancies for boys unfilled and about 80 for girls.

The committee have had this matter under consideration but no special steps have been taken up to the present, though the committee are desirous of ultimately having a full and detailed knowledge of the conditions of each local industry. At the January meeting the following resolution was moved, but was adjourned sine die:

"That a committee be appointed to inquire into the nature and extent locally of the employment of boys and girls in occupations which do not provide employment in adult life, and of alternate occupations in which no juvenile labor is employed and which accordingly have to recruit from adult labor shifting from other occupations, and to report thereon, with such recommendations as they may agree upon for preventing the evils arising from such 'blind alley' occupations."

At the request of the committee the manager of the exchange prepared a report on "blind alley" employment in local industries, based upon the report of Mr. Cyril Jackson to the poor law commission on "boy labor."

LEEDS.

The advisory committee in Leeds consists of: Six education committee representatives (including 1 secretary for education, 2 lawyers, 1 trade unionist, 2 teachers), 3 employers of labor, 3 trade unionists, 2 teachers, 2 others.

There are 14 men and 2 women on the committee.

District employment committees are being established. The first has already been appointed, and consists of 4 teachers and 6 others.

(i) *Teachers.*

(*a*) There are 3 elementary school teachers and 1 secondary school teacher on the advisory committee for juvenile employment.

(*b*) There are 4 elementary school head teachers on the central district employment committee which has recently been appointed.

(*c*) A few teachers assist in visiting children.

(*d*) Teachers forward particulars of every child before he or she leaves school.

(ii) *Certifying factory surgeons.*

Three of the four certifying factory surgeons for Leeds have agreed to furnish particulars of rejected children. The same form will probably be used as is already in use at Dewsbury. The surgeons will be supplied with forms and official envelopes addressed to the secretary of the advisory committee. It is hoped that the other surgeon will also agree to furnish particulars.

It is intended to visit each of the rejected children at their homes. Results will be reported to the surgeons and to the advisory committee, and noted on the cards of the child.

Head teachers have been requested by the secretary for education to forward school-leaving cards to the advisory committee at the beginning of the month for all children who will leave during that month.

All children who leave under the age of 14 (the great majority of the children in Leeds) have to come to the education offices to obtain an "employment certificate." They can not actually obtain a labor certificate entitling them to leave school until the employment certificate has been signed by an employer, who thereby pledges himself to employ the child. Either the children or their parents have to make at least two journeys to the education offices to obtain the labor certificate. The juvenile department of the exchange has recently been moved to special offices opposite the education offices. The attendance department now insists on every child or its parents coming to the juvenile advisory committee's offices as a matter of course before the certificate is issued. In this way the great majority of the children are actually seen personally before they leave school, and notes are made on the registration card.

The record of the first situation obtained by all children who leave under 14 is also obtained through the attendance department, which every week lends to the secretary of the advisory committee the whole of the employment certificates, bearing the signatures of employers, which have been issued during the past seven days. In this way a beginning is made with the obtaining of a complete employment record.

Most of the parents and children come to the attendance department between 4.30 and 6 p. m. Arrangements have recently been made by which one member of the district employment committee will attend every day at this time to interview parents or children.

No apprenticeship or skilled employment committees exist in Leeds. Girls are occasionally referred to a domestic servants' registry recently started by the Girls' Friendly Society.

Notices advertising the evening classes arranged by the education authority are exhibited at appropriate times of the year in the juvenile departments of the exchange. Every occasion is taken of recommending attendance at evening schools, both by exchange officers and visitors.

A special circular has been sent out to voluntary organizations dealing with boys and girls aged 13 to 16, together with a report form for use in connection with boys or girls who belong to such organizations and have been placed.

Up to the present, the visiting of placed boys and girls has been done wholly by voluntary workers (about 60 in number), who have been enrolled by the exchange. The supervision of this work will gradually be taken over by the district employment committee.

About as many children are in the "lapsed" column of the monthly return every month as in the "placed" column. Among these "lapsed" children are probably included those which need most attention, since presumably the most efficient children are placed. It is hoped gradually to obtain enough voluntary workers to visit all the "lapsed" children as well as the "placed."

It is found that for the better class of situation it is necessary to approach employers for a particular applicant—canvass possibly a number of employers for one boy or girl. The vacancies which are notified by telephone on the employers' own initiation are, on the whole, below the average in quality.

A detailed inquiry into the printing trade in Leeds is nearly completed and some progress has been made with the building trades.

In addition to inquiries into particular industries, the following points appear to need special attention:

(i) Comparison between the wages of skilled and unskilled juvenile workers. (The difference appears to vary in accordance with the intensity of the demand for juvenile labor. It is accordingly probably much less in Leeds than in the textile towns).

(ii) A study of the hours of labor: The maximum of 60 hours in nontextile factories and workshops, and the complete absence of any legal regulation of the hours of labor for office and transport workers (including errand boys) appears to result in the working of excessive hours by many young persons in Leeds—especially errand and messenger boys and certain classes of office boys.

In the beginning of this work a great deal of time was necessarily spent on details of organization, such as location of offices, printing of forms, conferring with local school officials, and forming the advisory committees. Conferences of teachers and social workers with the labor-exchange authorities were frequent. Some of the points brought out then are still worthy of serious consideration.

For instance, at the initial meeting in Exeter the school people insisted that it would be a mistake to post notices calling attention to the labor exchange where such notices might tempt the children to leave school. Everywhere the first effort made was to interest the teachers in the work of the advisory committees. Cooperation with the school may fairly be said to be the keynote of the juvenile labor exchanges.

There are schools which, because of their personal interest in the vocational future of their children and because of long contact with employers, have always been active in finding employment for their pupils. There are instances where for many years employers have been accustomed to secure each year from certain principals the pick of the leaving classes. In the opinion of competent observers, however, the practice of permitting employers to secure their help from teachers who are generally unacquainted with industrial affairs is undesirable and dangerous.

Not only was cooperation with the schools sought for at the starting of the labor exchanges, but beginnings were made; too, in enlisting the help of the school medical inspectors and the certifying factory surgeons. The industrial district of Dewsbury illustrates the type of service sought. The factory surgeon for the Dewsbury district reports to the advisory committee on every child who is rejected from employment because of any physical handicap. The committee's secretary then visits such a child and endeavors to obtain for it either suitable employment or necessary medical treatment. It was found in the early cases that children had been working for months after being rejected by the doctor because of defects which slight medical care would remedy, but no attention was paid to these defects until the secretary hunted up the children.

With much good sense the education authorities and the Board of Trade have made allowance for local sentiment regarding methods of organizing vocational assistance to children. Although both authorities aim at a degree of centralization, yet it appears that where local communities develop advisory and employment plans of their own, there is no serious interference. When Birmingham, for example, decided to operate under the education act, there was no difficulty in connecting the newly established juvenile labor exchange and its advisory committee with the undertaking of the local education authorities.

Many intricate problems have arisen in the working out of both the Choice of Employment and the Labor Exchanges Acts. They are by no means all solved as yet. Both acts ought to be regarded in their practical operation, therefore, as somewhat experimental and in the process of modification.

For the sake of clearness the situation with regard to the two acts just mentioned is summarized. In England and Wales two methods of administering juvenile employment schemes are in operation: One is the Board of Trade scheme, whereby that board conducts a juvenile labor exchange as part of the national system of labor exchanges throughout the country, and furnishes both the funds and the officials. In such case the board appoints a local committee of representative men and women, called the juvenile advisory committee, whose duty it is to cooperate with the exchange officers. London affords a striking example of this type of development. In Ireland it is the only scheme before the public.

The other method permits the juvenile exchange to be administered by the local education authority, namely, the education committee of the council, provided that said local authority submits a scheme to the board of education which can be approved under the joint memorandum already described. On approval, the board of education sanctions a grant of money in aid of the advisory work of the local labor exchange. It will be seen that this is an adaptation of the plan followed by Scotland in organizing its employment information bureaus in close coordination with the schools, some time before the national system of labor exchanges came into existence. Nearly two score local education authorities are now conducting such school advisory and employment agencies, the best known being those in Birmingham, Liverpool, and Cambridge. A dozen or more additional cities and towns have submitted schemes which are awaiting approval.

As regards the plan of work there are certain basic features common to all the juvenile labor exchanges, whether under the Board of Trade or the local education authorities. These features are, first, keeping a record of the children leaving school for work; second, offering advice and guidance to boys and girls between 14 and 17; third, granting interviews to parents and others who desire to consult the officials; fourth, keeping a register of the positions open. Perhaps the most striking of these features, and it is at this point that nationalization is the strongest, is the opportunity now open to boys and girls for individual advice and care when leaving the elementary schools. The schools have to turn over to the juvenile bureau the printed card forms on which are entered particulars as to health, character, aptitudes, etc., of all the leaving pupils. These records have to be passed in for all pupils, whether they desire assistance in finding employment or not. The records are not always thorough or intelligible, because not all teachers and schools perform this duty conscientiously. Indeed, some records seem to be valueless; still this is not a criticism of the scheme as a whole, for such deficiencies are remediable. The school usually puts itself on record with the records of its children.

In places where the Board of Trade has established juvenile labor exchanges, permission is secured from the education authority to distribute Board of Trade circulars and forms in the schools; to the local advisory committee the Board of Trade usually appoints several teachers, principals, and education committee members.

These advisory committees represent a vast amount of unpaid public-spirited service. They are unique to England. The juvenile labor exchanges have profited greatly by their interest and cooperation. In London and elsewhere these committees are divided into subcommittees known as "rotas," in sessions of which the members take turns in personally advising the outgoing boys and girls. American opinion regards the task of interviewing and advising as perhaps the most complicated and delicate service in vocational guidance, one demanding insight, expert knowledge, and a specialized training besides. That volunteers should undertake so difficult a task argues leisure and great devotion. It seems hardly probable, however, that this particular feature of the English work will be permanently left to the volunteer. Guidance during the critical years of adolescence is, as has been indicated, the principal aim of the Choice of Employment Act, with employment as a secondary consideration. The grant allowed by the board of education is specially stated to be in aid of the executive officer, or officers, appointed by a local education authority for this work:

> In view of the great importance of the duties of such an officer, and of the necessity of securing thoroughly adequate qualifications, the board is prepared to make annual grants in aid of approved salaries paid to executive officers in respect to duties carried out in accordance with the scheme under section 1 of the Choice of Employment Act.

The Board of Trade scheme expressly disclaims responsibility with regard to any advice or assistance given by its committees. The education officers, on the other hand, representing, as they do, the locally elected authority, which is accountable to a local constituency, act, as a matter of course, with a lively sense of intimate and responsible relationship to the children. The school employment bureaus are not without advisory committees of their own. Members of the care committees, which have been dealing thus far with school feeding and other needs of poor children, are rapidly including vocational assistance among their duties, while frequently they are appointed to the Board of Trade juvenile advisory committees.

A detailed description of a few of the foremost vocational aid enterprises in England and Scotland now follows, the work in Liverpool being first under consideration.

III. LIVERPOOL.

The juvenile employment committee of the Liverpool education committee, organized under the provisions of the Choice of Employment Act, began work in the summer of 1911. Offices devoted wholly to the purpose of the juvenile employment registry, with separate waiting rooms for boys and girls, were opened in the education building. The staff consists of the following officers, viz: A superintendent (acting under the direction of the director of education); a woman visitor; a man visitor; a junior clerk.

The plan of the Liverpool committee embraces the following aims:

(1) The collection and dissemination of information relating to the industrial conditions prevailing in the city.

(2) The furnishing of advice to young persons as to occupations for which they are best fitted, having regard to their education, ability, physique, predilection, and status.

(3) The encouragement of young persons to continue their education at evening classes and technical schools.

(4) The keeping of records showing the occupations taken up by children on leaving school.

(5) The maintaining of the central office with the schools acting as suboffices, for the registration of young persons applying for employment, and submitting suitable applicants for the vacant positions notified by employer.

(6) The supervision of young persons after they have taken up work, for the purpose of assisting in cases (*a*) where advice may be needed regarding the facilities which exist for extending a child's education, and (*b*) where other and better employment is sought.

A large advisory committee of employers representing the leading commercial, trade, and professional organizations of the city has been formed to help in the employment work.

Extraordinary efforts, as is well known, are always needed in order to vitalize a large committee and make it mean something. More important, from the writer's standpoint, is the cooperation of the Liverpool social workers,[1] who, among other services, are compiling a handbook showing the nature of the employments open to children.

One of the noteworthy activities observable in almost all the schools and institutions visited during the course of this inquiry is the extent of industrial investigation for the purpose of preparing occupational handbooks. The Liverpool education authorities are energetically promoting provisions for continued training, although unfortunately here, as in our own country, it is the evening school which is advocated. However, many children are doubtless thus assisted to some further training during employment.

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[1] These include heads of settlement houses, boys' club leaders, girls' club directors, etc.

Many teachers in Liverpool are acting as subagents, so to speak, of the central employment offices, but some are undertaking independent placement work. One finds, then, in Liverpool the central committee, the teachers and masters, and the Board of Trade labor exchange, all more or less engaged in placement activities, not always correlated. This situation, despite much individual good work, is deplorable; cooperation amongst these valuable agencies is greatly needed.

On the other hand, this community is not unaware of the waste in the present duplication of effort, and there are promising indications that Liverpool may yet work out one of the most effective instrumentalities for launching boys and girls in vocational life. A good idea of the nature of the discussions which take place at meetings of the juvenile employment advisory committee may be gained from an inspection of the minutes or proceedings of a typical meeting. The following is therefore presented, reporting a meeting presided over by Mr. Legge, the director of education in Liverpool:

At a meeting of the juvenile employment (advisory) committee held at the education office on Thursday, April 10, 1913.

James G. Legge, Esq., in the chair.

A statement as to the work accomplished by the juvenile employment registry in placing boys and girls in employment and furnishing advice, during the six weeks ended the April 5, 1913, was read and noted.

The chairman reported, with reference to the decision of the committee at their last meeting to invite the Master Builders' Association to send representatives to a conference to discuss the question of the difficulty in obtaining boys to enter the building trades, that a few members of the association had kindly consented to be present to-day. The members who attended were Mr. J. S. Brown, representing the carpenters and joiners; Mr. H. Cubley, representing the plumbers and painters; Mr. J. B. Johnson, representing the plasterers and slaters.

The chairman mentioned that inquiries which the committee had made from parents elicited the following reasons for not putting their boys to the joinery, plumbing, painting, decorating and paperhanging, bricklaying, plastering, and machine joinery trades:

(1) That a seven-year apprenticeship is too long; (2) that apprentices' wages during the first few years are not high enough; (3) that there is a certain amount of unemployment in all of the trades, and particularly in the painting and decorating; (3) that the plumbing and painting are unhealthy.

The representatives gave an interesting and informative account of their experience on these points, which may be summed up as follows:

(1) That the master builders generally have little trouble in obtaining apprentices, and that the best firms kept a waiting list made up to some extent by the sons of their own workmen, but that recently there appeared to be some difficulty in finding boys for house painting; (2) that the period of apprenticeship was too long, but they were opposed to a boy finishing his term before he was 21 years of age, though admitting that boys were preferred for the trade at 14 years of age; (3) that the wages in the early years of apprenticeship were lower in Liverpool than in inland towns; (4) that unemployment existed in some degree, but it was chiefly in the painting trade, and the other trades were scarcely affected by seasonal slackness, the weather, etc., but

the fact that when a boy came out of his time his employer was obliged, under the association rules, to pay him at the full rate of wages made it sometimes difficult for him to get work, as preference was usually given to the experienced journeyman; (5) that, with due caution exercised on the part of the mén, plumbing and painting were not unhealthy trades.

It was further stated that parents should insist upon the boys being properly indentured, as otherwise there was a great temptation to a boy to break away during the last year or two without finishing his apprenticeship. The rules of the association required masters to bind all their apprentices.

Mr. Brown (speaking as a master joiner) was strongly of opinion that a boy should not be placed to machine joinery without some knowledge and experience of building joinery, as there were certain marks and symbols used on the timber which were unintelligible to a boy unless he had had some training in the latter branch of the trade.

Finally, the representatives were of opinion that should this committee see their way to suggest to the Master Builders' Association that the commencing wages of apprentices should be raised, the question would receive sympathetic consideration.

The representatives were thanked for their kindness in attending the meeting, and then withdrew.

The chairman reported the progress which had been made in the formation of evening classes for the preparation of boys for the mercantile marine, according to the scheme which was recently drawn up by the juvenile employment committee.

The following papers and forms give an insight into the office detail of the Liverpool scheme. The first is a draft letter from head teachers to parents:

EDUCATION COMMITTEE, CITY OF LIVERPOOL.
................................School,
........................Dept.,
....

DEAR SIR OR MADAM: I am desired by the education committee to call your special attention to the steps they are taking to give advice and guidance regarding the occupations young people should take up on leaving school. It is becoming more and more a matter of serious concern that, through want of information or proper guidance, children on leaving school drift into employments offering good wages for the moment, but affording no real preparation for earning a living in later life. At 17 or 18 such employment usually comes to an end, and it is then too late to take up any skilled occupation.

Furthermore, due regard is not always paid to the capacities or inclinations of the children, with the result that a certain number take up work for which they are unsuited and which they dislike. The consequence can only be much waste to the community at large and disappointment to employers, parents, and children.

The committee are anxious to cooperate with parents in improving matters, and they are making arrangements to the best of their power to collect useful information, and to afford, as far as possible, means for giving advice. In both of these I have been asked to assist so far as my own school is concerned, and I very willingly undertake the task.

The committee also feel strongly the importance of evening continuation schools, and wish to urge parents to allow their children to take full advantage of these and thus make themselves more efficient and their services of greater value.

Your....................informs me that (s)he will soon be leaving school and that (s)he wishes to obtain a situation. If you desire advice or help, will you kindly come to see me at this school on....................at......o'clock, when her (his) class teacher and I will be glad to talk over with you your child's future. You may be

sure that we will do all in our power to help you, and that our efforts will be supplemented by those of the director of education and the staff at the education office in Sir Thomas Street.

I am yours, faithfully,

..............................,
Head Teacher.

There are also letter forms to be addressed to boys and to girls.

TO BOYS.

CITY OF LIVERPOOL, EDUCATION OFFICES.

JUVENILE EMPLOYMENT COMMITTEE.

To..............................:

1. The juvenile employment committee learn that you will shortly be leaving school. They hope that, with your parents' help and approval, you have found, or will find, some suitable employment to go to. The choice of this is very important for you. It is not difficult for you to find a situation, but if it is one which will only employ you for two or three years, without any prospects of improving your position afterwards, you should not take it until you have your teacher's advice about it. Your teacher may be able to assist you, or will perhaps advise you to come to the committee's offices (at the address you will see at the top of this letter) and get advice there, which will be gladly given you. Do not decide in a hurry; very many boys and girls have done that and regretted it all their lives afterwards. You are not old enough, and you have not experience enough, to decide for yourself, so talk over what you will do, first with your parents, then with your teacher, and then, if you like, at the committee's office. The committee often hear of situations vacant. Of these they keep a list, and perhaps one of them might suit you if employment is not found for you in any other way.

2. Important considerations for you to bear in mind are these: You have to think of the future and not merely of the present; the man who knows a trade has always a better chance of success than one who is entirely unskilled, and often a better chance than a clerk in an office.

3. Remember, too, that the boy who works cheerfully and with industry has the best chance of getting on. Always be ready to do a little more than you are asked.

4. Do not give up one situation until you have got a better one. If you are in a difficulty your former teacher, or the committee's officer at Sir Thomas Street, will be willing to advise and help you.

5. The committee wants you to look upon them as your friends, for they are anxious to help you. There is one point to which they would wish your attention to be specially drawn. You ought not, on leaving your day school, to think that your education is completed, but should seek to join a suitable evening continuation school in your neighborhood. About this your teacher will advise you.

6. Finally, remember that whatever others do for you, you must put your own shoulder to the wheel.

The letter addressed to girls is similar in form and content to that to boys. The fourth paragraph applies to domestic service:

4. Again, many girls do not realize the advantages which domestic service has over many other forms of employment. To a girl who has to provide for herself the committee would urge that domestic service in a well-conducted household is one of the best occupations which she can take up, inasmuch as it may secure for her a good home, healthy work, sufficient wages to enable one to save, and, lastly, a training which may be invaluable in later life if one is called upon to manage a home of her own.

Other forms in use include the following:

LIVERPOOL EDUCATION COMMITTEE.

EDUCATION (CHOICE OF EMPLOYMENT) ACT, 1910.

Record of child's attendance at school:

Name of pupil..

Address..

Date of birth...

Name of school...

Date of entering school last attended..

Date of leaving present school..

Age on leaving............years............months.

(Signed) ....,

Head teacher.

Date..............................

Particulars to be filled up if the child has been transferred to a secondary trades school, etc.:

Name and place of school..

Type of school...

Entered school on...

Left school on..

Class or form on leaving...

(Signed) ....,

Head Teacher.

Date..............................

To be filled up by head teacher of evening continuation or technical classes:

Session.	Name of school.	Course.	Year of course.	Attendances.		Examination results.	Merit of work.	Signature of teacher.
				Actual.	Possible.			

Record of Employment.

To be entered by holder, with names of employers, nature of employment, dates of beginning and ending employment:

....

....

....

Changes of address since leaving school, to be entered by holder:

....

....

Liverpool Education Committee.

EMPLOYMENT RECORD.

Employment of scholars leaving school.

Name of pupil..................................Address..........................
Date of birth...................When leaving school..............................
Standard or class...
Character and conduct [1]...........Physique [1]............Hearing [1]...............
Sight [1]................Regularity [1].................Punctuality [1]................
Occupation of father, mother, or guardian [2]...
Occupation obtained by parent or guardian for child...............................
Evening school which pupil will attend..
Brief report of head teacher as to capacity and suitability of scholar for the occupation selected and opinion of the head teacher as to the kind of employment, if any, at which he would be likely to succeed.

....
....
....
....

(Signed)..Head Teacher.
.... School ....Dept.

Liverpool Education Committee.

EMPLOYMENT NOMINATION.

Employment of scholars leaving school.

Name of pupil..................................Address..........................
Date of birth.............................When leaving school.....................
Standard or class...
Character and conduct [1]..............Physique [1]............Hearing [1]............
Sight [1]...............Regularity [1]................Punctuality [1]...................
Occupation of father, mother, or guardian [2]...
Occupation preferred by parent or guardian for child.............................
Evening school which pupil will attend..
Brief report of the head teacher as to the capacity and suitability of scholar for occupation mentioned, and suggestion as to any other kind of occupation or employment for which he may seem more suited.

....
....
....
....

(Signed)..Head Teacher.
.... School ....Dept.

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[1] E, excellent. V G, very good. G, good. F, fair.
[2] Strike out whichever does not apply.

LIVERPOOL EDUCATION COMMITTEE,
14 Sir Thomas Street, ... *1913.*

JUVENILE EMPLOYMENT REGISTRY.

I have to inform you that vacancies have / a vacancy has arisen for...

Please, therefore, attend at this office on.. next, the............instant, at...................... Be sure to bring with you a testimonial from your head teacher.

JAMES G. LEGGE,
Director of Education.

NOTE.—If, however, you have now obtained a situation, please send me word as to the nature of the work and the name of your employer.

BRING THIS CARD WITH YOU.

CITY OF LIVERPOOL EDUCATION COMMITTEE,
14 Sir Thomas Street, ... *191–.*

JUVENILE EMPLOYMENT REGISTRY.

MEMO.:

Please note that.. lately a scholar at your school, has to-day been found employment by the above registry as

....

JAMES G. LEGGE,
Director of Education.

LIVERPOOL EDUCATION COMMITTEE.

JUVENILE EMPLOYMENT REGISTRY.

No............ 14 SIR THOMAS STREET,
...................., 191–.

To...

In reply to your request for...
I send you with this card..
who should present it in a sealed envelope, addressed to you. If you decide to engage him / her please sign this card at the foot and return it to me as soon as possible. If you do not engage bearer, please hand this card back to him / her *unsigned.*

JAMES G. LEGGE,
Director of Education.

ENGAGED. (*Signed*)...

LIVERPOOL EDUCATION COMMITTEE.

Juvenile Employment Registry, 14, Sir Thomas Street.

Name.............................. Address................................
No. ....

This is to inform you that I have now obtained a situation as.................. with the firm of...

....

Address..

(Signed)..
Date..

To the DIRECTOR OF EDUCATION,
Liverpool.

[Color of card, lavender.]

Nomination Form to be used where employment has not been found.[1]

LIVERPOOL EDUCATION COMMITTEE.

EMPLOYMENT OF SCHOLARS LEAVING SCHOOL.

Name of pupil..............................Address..............................
Date of birth..............................When leaving school................
Standard or class............Character and conduct [2]..............................
Physique [2]......Hearing [2]......Sight [1] .....Regularity [2]......Punctuality [2]......
Occupation of father, mother, or guardian [3]...
Occupation preferred by parent or guardian for child................................
Evening school which pupil will attend..
Brief report of head teacher as to capacity and suitability of scholar for the occupation selected and opinion of the head teacher as to the kind of employment, if any, at which he would be likely to succeed.

....

....

(Signed)..................................Head Teacher
..............................School....................Dept.
Date...............

Remarks (to be filled up at the education office).

....

....

....

[Color of card, pink.]

LIVERPOOL EDUCATION COMMITTEE.

JUVENILE EMPLOYMENT REGISTRY—PARTICULARS OF VACANCY NOTIFIED BY EMPLOYER.

Name of employer...
Address...Tel. No. ....
Trade or profession..
Nature of vacancy..
Other information..

(Details as to wages, hours of duty, apprenticeship, etc., should be obtained, if possible.)

....

....

....

Date....................

---

[1] A similar card of a different color is used if employment has been arranged.

[2] E. Excellent. V. G. Very good. G. good. F. fair.

[3] Strike out whichever does not apply.

[Color of card, light green.]

Trade No.

................................*School board*................................*School* ....

Name ....**Address** .... Renewals.

Date of birth..............([1]....years....months); Date when free to start work.................

Standard of education attained: ....

Normal for age, i. e., at merit certificate stage. } Delete words not applicable. ....

Normal for age 12, i. e., at qualifying stage. } Add here any } ....

Below qualifying stage. } specialty } ....

....

Date of leaving school..............[2] Attendance..............[2] Punctuality.......................

[2] **Behavior**...............[2] **Sight**............[3]...........[2] **Hearing**............[3].................

Physique—(a) Height....ft.....ins.; (b) **Weight**....stones....lbs. (as at the last statutory .... **medical examination).** ....

(1) Attending or (2) Going to attend continuation school. Name of continuation. ....

(1)................ **(2)**..School ....

Subjects of course of study...

Occupation desired (parent to be consulted by pupil)..

Teacher's opinion as to nature of occupation pupil is fitted for by natural bent and educational equipment..

(N. B.—A specific reply will facilitate administration)..

....

Willing to be apprenticed?..

Does pupil desire the assistance of the labor exchange?.............(If reply is in affirmative, ... **pupil is to be directed to labor exchange nearest residence).** ....

Teacher's further remarks (confidential)..

Labor exchange official's confidential remarks..

....

JUVENILE EMPLOYMENT.

....

GIRLS. ....

[1] A similar card of a different color is used for boys. ....

Employers between period of leaving school and registering at the Labor Exchange.	Nature of employment.	Wage.	Duration of period.	Date of leaving.	Remarks.

Employers to whom sent.	Nature of vacancy.	Classification Number.	Date when sent.	Placed		Remarks.
				T.	O.	

---

[1] For convenience, please state pupil's present age.

[2] Use Ex., V. G., G., and F.

[3] If any defect, state nature thereof.

IV. LONDON.

With nearly 70,000 children leaving the elementary schools each year, the problem in London is sufficiently appalling. Volunteer service has developed here to an extraordinary degree. The London County Council with its energetic education committee and system of care committees; the Board of Trade with its strong central juvenile advisory committee and 18 local advisory committees; the apprenticeship and skilled employment committees; befriending committees; and other agencies in bewildering variety—all these make the work in London deserving indeed of a separate monograph. The magnitude of London's problem, and the impossibility of dealing with it in the way smaller communities attack their vocational aid problems has made the London scheme sui generis. To understand the workings of the placement machinery in London, it will be necessary to consider first the organization of the London juvenile advisory committee. This is appointed by the Board of Trade to cooperate with the juvenile labor exchanges in the area known as the administrative county of London. It consists of:

1. Six persons nominated by the London County Council.
2. Six persons possessing special knowledge of children and juvenile employment.
3. Three employers.
4. Three workpeople.

It is the duty of this committee to advise the Board of Trade from time to time in regard to all matters relating to the management of the juvenile branches of the labor exchanges, and in particular to form committees in connection with each local labor exchange. In addition, it supervises and directs the work of such local committees.

This central committee appoints the local advisory committee whenever a juvenile labor exchange is started in London.

Thirty persons constitute the local advisory committee. Of these, 10 are nominated by the London County Council and 2 by the consultative committee of London head teachers, while there can not be less than 4 representatives of employers and 4 representatives of workpeople. The remainder is made up of persons specially interested in the welfare of young persons, and includes teachers and social workers.

The following are the functions of the local committee as prescribed by the Board of Trade:

> 1. To focus the existing scattered efforts of different organizations dealing with juvenile employment in the locality.
>
> 2. To organize a systematic procedure for obtaining, in cooperation with teachers and the care committees, knowledge of the character, qualifications, and home conditions of children about to leave school, and about to register at the labor exchange as applicants for employment.

3. To form subcommittees or "rotas" to attend at the exchange for the purpose of interviewing applicants and their parents in order to—

(*a*) Give advice with regard to employment in general and with regard to particular vacancies.

(*b*) To endeavor to secure the attendance of boys and girls at evening continuation or technical classes.

4. To secure in cooperation with the labor exchange authorities that—

(*a*) Employers are informed as to the work of the local committees.

(*b*) Adequate information is obtained as to the conditions and prospects of particular trades and situations.

(*c*) The records of all information relative to children, employers, and employment are so kept as to be readily available for the purpose of the committee.

5. In cooperation with care committees, boys' and girls' clubs, and institutions for the welfare of juveniles, to organize a system for keeping in touch with such boys and girls when placed as may be thought to need supervision.

6. To report periodically and make suggestions to the London juvenile advisory committee and to carry out such instructions as may from time to time be issued by them.

A local committee may recommend to the London juvenile advisory committee the names of persons as new members of the local committee provided the number (30) is not exceeded. It is also within the power of a local committee to recommend to the London advisory committee the names of persons to serve on rotas, as approved workers, without being members of the local committee. Local advisory committees are concerned with juveniles under the age of 17.

The work of these local committees presents four phases:

1. THE SCHOOL-LEAVING FORM.

Shortly before a child leaves the elementary school a form, termed the "school-leaving form," is filled. This is done in part by the head master of the school and in part by a member of the school care committee. The members of the care committee endeavor to visit the home and see the parents as well as the child.

The form, if properly filled, supplies the information an advisory committee requires to carry out effectively its work of advising juveniles as to employment.

It is important to know whether the child has shown special ability in any direction and in what part of the school curriculum he has succeeded best. His composition or arithmetic papers may be above the average; this would suggest for him a possibility of success in an office; or he may be unusually clever with his hands—the report of the manual training instructor in the case of a boy, or in the case of a girl, her needlework, or the report of the domestic science teacher, should show whether this is the case; here some skilled trade would be indicated as a suitable opening. If the school is a "central school,"[1] the bias of the school curriculum and the special course of instruction the child has taken are mentioned. Such information, when carefully obtained, indicates in a general way the kind of employment for which the child is probably best suited.

---

[1] This school corresponds to what is coming to be called in the United States a prevocational school.

Secondly, there is a record of the child's health as it appears in the medical register. It is highly important that all defects should be noted, and at this point more care on the part of physicians is obviously necessary. Arrangements are now made for the school doctor to reexamine, shortly before they leave school, all children among whom defects have been found at a previous inspection. If, in addition, the care committee are doubtful about the health of any child they may call for a special examination by the school doctor. A large number of young people constantly enter employment for which they are physically unfit, and they soon break down. The advisory committee must be supplied with information sufficiently intelligent and detailed to prevent this happening in the case of boys and girls who use the exchange.

Thirdly, there is the report on the home circumstances of the child. An advisory committee can do their work well only as they are acquainted with the home conditions; these directly affect the choice of employment. When, for example, the need is great, the child must earn at once and take work which pays the most. Low earnings with prospects of learning a trade are out of the question in such a case, and, in the absence of subventions for needy children it is useless for an advisory committee to suggest such trade. On the other hand, when such poverty is not present the advisory committee can urge the parents to sacrifice immediate earnings for the sake of better prospects.

There is a space in the school leaving form for recommendations as to employment. In making these recommendations the care committees are not required to specify the precise occupation for which the boy or girl is best fitted. This is left to the labor exchange, where the various openings and prospects are presumably better known.

In the majority of London County Council elementary schools the school leaving form is filled for each child leaving school, and all forms are sent to the local labor exchange. It is necessary for the exchange to receive all forms because a large number of children who have not expressed an intention of registering eventually find their way to the exchange. These forms are sent marked either "for filing" or "for action." The former refers to children who will probably not apply to the exchange; the latter to such children as are advised to apply. In certain cases the care committee seem to have unfortunately confined their recommendations of the exchange to those children who, because of poor homes or physical or mental handicaps, would not, unaided, find employment. As a result, from lack of fit applicants, the exchanges often find themselves unable to fill good vacancies, especially those in business houses.

2. THE WORK OF "PLACING."

The second part of the work, with which the advisory committee is concerned, relates to the placing of juveniles who register at the exchange. This work is carried on under the direct supervision of the committee. The children are divided into two classes—juveniles fresh from school with school leaving forms, and other juveniles without school leaving forms. Eventually when all schools send forms to the exchange, all juveniles from school will have school leaving forms. But at present in certain districts all schools have not yet been affiliated with the exchange. There will, however, always remain a large number of young people who register at the exchange some time after leaving school. The work of the committee is concerned with both classes of juveniles, though special and more detailed attention is devoted to those coming direct from school.

3. SCHOOL-LEAVING-FORM CHILDREN.

As already explained, the school leaving forms sent to the exchange are marked either "for action" or "for filing." In the case of the latter the forms are filed at the exchange for use in the event of registration at some later date. In the case of the former the children and their parents are invited to attend at the exchange.

The advisory committee endeavor to interview all the juveniles who are so summoned. For this purpose the committee divides itself up into small subcommittees or "rotas," consisting of persons who agree to attend at the exchange at certain times for interviews. It has already been stated that the committee may, with the consent of the London advisory committee, invite persons who are not members of the main committee to serve on a "rota." It sometimes happens that a head teacher, who is not a member of the advisory committee, is willing to be present at a "rota" to which pupils from his school have been summoned.

The "rota" interviews the young people and parents who respond to the summons. The school leaving forms are before it and a list of vacancies sent by the local secretary or through the clearing house.

The decision of the "rota" takes various forms, according to the special circumstances of the case:

1. In the case of a boy or girl who has left school it may be found possible from the list of existing vacancies to suggest an opening. In this case the young applicant is given the green card to take to the employer. There may, however, be no suitable vacancy. In these circumstances he is registered and told to call at the exchange again. It is the duty of the secretary to endeavor to find a position. This is done either by getting into touch with the local employers, by notifying the need to a neighboring exchange, or by sending the child's card to the clearing house for special canvassing.

The home circumstances may, however, be such that the parents are unable to wait while search is made for a desirable occupation. The "rota" then places the juvenile temporarily while awaiting a more satisfactory opening.

2. In the case of boys and girls still at school, the procedure is much the same except that the child can not be placed until free to leave school. Children requiring special employments are encouraged to remain at school until such an opening has been found. In other cases they are asked to call at the exchange as soon as they leave, when the decision of the "rota" will, so far as possible, be carried out by the exchange. In certain cases the "rota" has to advise the juvenile to continue at school for a longer period.
3. The "rota" at times decides to refer the juvenile to some other agency dealing with special forms of employment, as for example, the apprenticeship and skilled employment committee or the metropolitan association for befriending young servants.

The care committee of the school from which the juvenile comes is informed of any definite decision of the "rota." It has happened that children have given care committees inaccurate accounts of the advice given them at "rotas," and very often the child, when summoned, does not attend. In order that the care committee may have full knowledge of the proceedings at the exchange it has been decided that—

When a school leaving form has been sent to the exchange marked "for action"—

(a) If the child does not attend when summoned the secretary shall inform the care committee.

(b) If the child attends and is advised and not placed, the secretary shall send to the care committee Form "A," indicating thereon the nature of the advice given.

(c) If the child attends and is placed, the secretary shall send to the care committee Form "A" in the usual way.

In addition to interviewing juveniles fresh from school, the "rota" endeavors to interview those juveniles, who, coming with school-leaving forms have previously been placed by the exchange, but who, for one reason or another, have lost their employment. Rota meetings are also open to all children or others who come for any special advice or help.

There are in London various associations concerned with the problem of finding employment for certain classes of juveniles. Cooperation between the advisory committees and the apprenticeship and skilled employment committees is very close in certain districts, and is based upon the following rules drawn up between the two bodies:

Rule I.—Except in cases where a parent or employer objects, the entire work of indenturing apprentices, with or without premium, shall be dealt with by the apprenticeship and skilled employment committee, and not by the local advisory committee.

Rule II.—Boys and girls suited to apprenticeship, for whom there are no suitable vacancies at the exchange, may be referred to the apprenticeship and skilled employment committee.

Rule III.—The apprenticeship and skilled employment committee shall notify to the local advisory committee the names of all their juvenile applicants in respect of whom school-leaving forms have been issued.

Rule IV.—When the labor exchange has a vacancy for an indentured apprentice and the employer does not object, the vacancy shall be referred to the apprenticeship and skilled employment committee and dealt with by them.

Rule V.—When the apprenticeship and skilled employment committee have a suitable vacancy which they are unable to fill they shall apply to the local advisory committee for a suitable boy or girl, and vice versa.

Rule VI.—Apprenticeship and skilled employment committees may canvass employers, but only after consultation with the secretary of the local advisory committee in whose district the firm to be canvassed is situated.

Rule VII.—As far as possible, all information about juveniles and vacancies possessed by one party to this arrangement shall be at the disposal of the other.

Rule VIII.—Physically handicapped children who are not eligible for the help of the "after-care committee for children from the physically defective schools" shall be referred by the local advisory committee to the apprenticeship and skilled employment committee, if the latter be willing to receive them.

In July, 1913, these rules were reconsidered. The London juvenile advisory committee have agreed that the rules should be regarded more by way of suggestions than as rigid rules. The wording of rule 4 has been slightly altered, otherwise the scheme remains much as it was. An arrangement has been made whereby the local advisory committee is notified by the apprenticeship committee of the result of each case referred to it, so that the child so referred does not slip between the two agencies.

Metropolitan association for befriending young servants.—Girls applying to advisory committees, who desire to enter indoor domestic service are, in most cases, referred to the local branch of the metropolitan association for befriending young servants. (A new arrangement is now under consideration between the London juvenile advisory committee and the metropolitan association for befriending young servants whereby girls suitable for domestic service may be more effectively dealt with than heretofore.)

Friends of the poor.—This society has agreed to cooperate with the local advisory committees on the following terms:

(1) They will inquire at the exchanges to ascertain whether any juvenile with whom they are dealing is known.

(2) The committee may refer to them certain difficult cases of poverty.

(3) When they can not supply juveniles required by the firms with whom they are in touch, they will inquire at the exchange to see if there are suitable juveniles available.

Boys' country work society.—This society places boys on farms (*a*) with a view of their settling in the country permanently; (*b*) with a view to emigration when sufficiently trained and of the right age.

Arrangements have been made whereby vacancies notified by the boys' country work society are circulated to local advisory committees. The society's form is filled up at the exchange in respect of suitable applicants, who are interviewed by the representatives of the society. In special cases of need the society arranges to assist in providing the necessary fare. They also undertake to keep in touch with the boys thus placed.

Marine society.—The arrangement made for boys wishing to go to sea provide that the marine society will accept eligible candidates free of all cost to the parents or guardians; clothe, maintain, and train them entirely at their own expense. On the completion of a boy's training the society will find him occupation either in the Royal Navy or the mercantile marine.

Mentally and physically defective children are dealt with through appropriate special school care committees and after-care committees. In addition to these special arrangements the local advisory committees work in close touch with local scout masters, boys' and girls' clubs, etc., endeavoring to assist in placing their members in suitable occupations.

SPECIAL INQUIRIES.

In order to assist the work of committees, the Board of Trade have agreed to carry out inquiries into the conditions and prospects existing in certain trades. The results of such inquiries are printed and supplied to members of advisory committees. Reports are now published on the conditions of employment in—(1) Ready-made women's clothing trades, (2) bookbinding and stationery trades (girls), (3) steam laundries, (4) leather-working industries, (5) building trades.

The Board of Trade will soon issue shorter reports in pamphlet form dealing with various trades. These are in course of preparation and are intended for the guidance of members of advisory committees.

4. THE CLEARING HOUSE.

To complete the organization of the work of placing, something after the nature of the clearing house is essential. None of the areas of the local labor exchanges constitutes an industrial unit. There are districts where children are numerous and the vacancies relatively few; and there are districts where conditions of an opposite character exist; further, it is often the case that the districts which possess the largest number of qualified children are the districts which afford the least satisfactory openings.

A clearing-house system, designed to meet this problem, has been attempted in connection with the labor exchange in what is known as the City of London—the nonresidential, financial district of London. A special advisory committee has recently been formed at the city exchange to supervise and advise on the clearing-house system. This committee does not deal with the actual placing of juveniles—this being the work of the committees attached to the local exchanges—but its special duty is that of considering how vacancies can best be obtained and circulated to the local exchanges. The committee consists of persons, employers and employees alike, representing the large city trades and businesses, and in part of chairmen of local advisory committees. As at present partially organized, the arrangements at the clearing house are as follows:

The clearing house deals with vacancies coming from two sources.

The vacancies, from whatever sources obtained, are classified into three groups, lettered A, B, or C:

A. Vacancies of a very special character.

B. Vacancies offering good prospects of permanent employment.

C. Vacancies in general, of the errand-boy type.

These lists, as classified, are sent out early each morning to reach the local exchange in time for an evening rota meeting on the same day. In general, A and B vacancies are circulated to all exchanges and C vacancies to a single local exchange. In the case of C vacancies the juvenile is sent direct to the employer. When a juvenile for an A or B vacancy has been chosen he is, in general, sent to the city exchange and from there, if regarded as suitable, to the employer. If a juvenile so dispatched is not successful in his application he returns to the city exchange and is sent, where possible, to apply for another vacancy of the same type, i. e., a juvenile sent by the local exchange for an A vacancy is sent to another A vacancy and a B juvenile to a B vacancy. But a juvenile sent by a local committee for an A vacancy will not be sent to a B or C vacancy, or a B juvenile to a C vacancy, without first consulting and obtaining the consent of the local secretary.

It has also been arranged that local committees who have on their books juveniles requiring vacancies of a special character may forward particulars of the juvenile in question to the clearing house, when the canvassers there will, in the course of their duties, make special search for the kind of vacancy asked for.

There are (a) vacancies notified to the city exchange by employers and (b) vacancies which local exchanges have been unable to fill locally and have notified to the city exchange.

The work of canvassers attached to the clearing house is not confined to the administrative area of the city of London, but includes adjoining districts where extent of employment is large.

THE POWERS OF THE COMMITTEE.

The Board of Trade have intrusted to local advisory committees certain important powers with regard to the "placing" of juveniles. There is reproduced below a memorandum on the subject which was recently circulated to local committees by the London committee.

The Board of Trade have agreed:

1. That, subject to any general regulations issued or to be issued from time to time by the Board of Trade or the juvenile advisory committee, the local advisory committees be empowered to decide whether juveniles shall or shall not be submitted to employers notifying vacancies, provided that where such decision—

(*a*) Takes the form of a resolution that juveniles shall not be sent under any circumstances to a particular employer, a record be kept of such cases, with the reason for such decision, and a quarterly return of such cases be made to the London juvenile advisory committee;

(*b*) Takes the form of a resolution that juveniles shall not be sent to certain types of employment, or shall be sent to employers only under certain conditions, such a resolution shall not be acted upon until it has received the approval of the juvenile advisory committee and the Board of Trade.

2. That, in the event of the manager disagreeing with the decision of a rota to send a particular juvenile to a particular place, the juvenile shall not be sent to that vacancy, and the action taken shall be reported to the main (local) committee.

It will be seen that when the committee decide not to send juveniles under any circumstances to a certain type of employment, as distinguished from one particular employer, the decision must take the form of a recommendation to the London juvenile advisory committee. It would obviously be of little use for a single exchange to decline to fill vacancies of a certain kind if other exchanges continued to fill them. Uniformity of action, therefore, is aimed at by the London committee.

The authorities are under no delusion as to the number of what may be termed really satisfactory openings for children. Returns of the occupations followed by boys on leaving school were obtained a few years ago by the London County Council. These returns showed that about half of the boys entered blind-alley employments, and, at most, a third found employment in any class of work which could be, in any manner regarded as skilled. Employers offering vacancies of the less satisfactory kind are able to do without any help from labor exchanges. For a long time they will continue to be able to do so, despite all labor exchanges. Many children must work as soon as possible; their poverty is real. Now the records show how limited is the number of good openings, amounting indeed in the cases of the boys to not more than about a third of the available positions. Obviously the remaining two-thirds of the boys in search of work are driven to unpromising and undesirable sorts of work.

This situation is bad, and it will not be remedied alone by the establishment of advisory committees. Nevertheless, there is a positive social gain in the existence of these committees. Vacancies of any kind will be filled, no matter what any committee may think; but they are now to an increasing extent filled with the knowledge of the labor exchange people.

The advisory committee is enabled to keep in touch with the boy; they may be able to find him more suitable employment at a later date; but they are, at any rate, in a position to trace his industrial career and ascertain exactly the effect his work has upon him. This is important.

There can never be a satisfactory solution of the problem of juvenile employment until detailed and conclusive information is available regarding the conditions of boy and girl labor.

It is hoped that the advisory committees, in their dealing with disadvantageous forms of employment, will be in a position to point out what further public action is necessary to remedy evils which may be discovered.

A very large percentage of children who apply to the exchange do not obtain employment through the exchange. Of the juveniles who register, little more than half are found employment. The remainder find work on their own account, and nothing more is known of their careers. To remedy this deficiency is perhaps the committee's most important duty.

Where the less satisfactory openings are offered, the conditions and the reasons why the openings are not satisfactory are explained to the juveniles, and if possible, to their parents. If they decide to apply for such vacancies, they do so at least with knowledge of the facts. Some rotas endeavor to supervise the career of the young worker placed in these unpromising employments. Instructive instances of such services are on record; but satisfaction with the present situation is out of the question.

As matters stand, there are a certain number of vacancies and a certain number of youthful applicants. The problem which the committee are called on to solve is how best to sort out the different applicants and assign them to the different vacancies. Apart from such advice as the committee are able to give, this sorting process depends largely on the unguided choice of the children, who know little of the prospects and the conditions existing in the various kinds of employment. The advisory committees are genuinely striving to replace this method of unguided choice of the juvenile by some knowledge of the prospects in the different trades and occupations. The secretary visits local employers and places of work in order to find out what the openings are. This canvassing is properly regarded as a check against the danger of turning the exchange into a channel through which unsupervised employers can obtain an indefinite supply of young workers. Mere statistics of placements do not necessarily indicate successful work; more committees would do well to remember this point.

SUPERVISION.

A most important feature of the local advisory committees' work is the attempt to organize a system under which accurate information may be obtained of the industrial career of each boy and girl placed. The committee endeavors to test the value of its work by reviewing the progress of the placed children. The point of view of the child, his parent, as well as the opinion of the employer, are ascertained. A boy may have been placed in employment for which he is physically or otherwise unfitted, or he may be given a situation with prospects of permanent employment. He may have taken up work in which he can hope to be successful only by taking certain special training courses. He is advised accordingly. Some employers require certain qualifications in the worker engaged. It is desirable that the committee should know such facts. Now all this kind of information, so essential to good work by an advisory committee, can be secured only through investigation.

An interesting method of ascertaining the industrial progress of the young workers has been adopted by some advisory committees:

Every juvenile, when he is placed, is invited to call at the exchange periodically and let the committee know how he is getting on. He comes in the evening when rotas are meeting. A notice of such meetings sometimes appears in the window of the exchange. It is found that children make considerable use of this opportunity of consulting the secretary or committee.

Some local advisory committees have established cooperation between themselves and the local certifying factory surgeons, who, in certain cases, have undertaken to notify the advisory committee of the names of rejected children, with a recommendation as to the type of employment for which they are best suited. The advisory committees endeavor to place the juveniles in accordance with the physician's disclosures.

This, then, in broad outline, is the work of the London advisory committee and its local committees. There is an earnest endeavor, first, to know the children, their needs and capabilities; secondly, to place them as advantageously as conditions will allow; and thirdly, to study results of this placement through the system of after-care which is being developed. The facts which will be forthcoming after a few years' trial of this great enterprise will be invaluable for their illumination of industrial conditions as reflected in the careers of the children studied, and of special service in the formulation of future educational and social policies.

The London schools are being brought into close working relation with the exchanges. Many teachers are breaking away from the traditional silence and routine of the English teaching body, and are making personal studies on their own account of the children who leave prematurely for wage earning.

As yet the United Kingdom is not ready for the German system of compulsory day-time instruction for young workers. Attention is therefore centered on existing shortcomings in the evening school system. These defects are glaring, though not at all peculiar to England. Dwindling classes, indifferent and disheartened students, the natural handicap of artificial lighting, and weariness of both students and teachers, after the day's toil, are familiar criticisms. The situation in Great Britain, as with us, is an indictment of the principle of voluntary and of evening attendance by children between 14 and 18 years of age. The Munich boy between 14 and 17 years of age, employed throughout the year though he may be, is compelled to attend for 240 daylight hours per session during each of the three years. In London the number of student hours per enrollment per evening session amounts to something like 45.

It is interesting to note that the education committee of the London County Council has begun the task of considering a reorganization of the evening schools in order to meet better than they now do the neglected needs of an army of young wage earners. The changes now in process in the council's evening schools are designed to aid along the lines of the occupations of the students. Advisory committees are proposed for these evening schools, to consist of employers, social workers, and those connected with the advisory committee of the labor exchanges. A large number of vocational institutes, so called, are projected, with special classes for post-office messengers and other groups of young employees.

In order to get a clearer idea of the organization and work of the advisory committee, two documents, one outlining the general rules of procedure for an advisory committee, and the other reproducing the monthly report of one of the best of the local advisory committees follow:

DRAFT RULES OF PROCEDURE FOR AN ADVISORY COMMITTEE FOR JUVENILE EMPLOYMENT.

1. *Times of meeting.*—The committee shall meet, as required by the Board of Trade, and at such other times as the committee may decide.

2. *Notice of meeting.*—The agenda for each meeting shall be posted to each member not less than 48 hours before the time of meeting.

3. *Circulation of minutes.*—The minutes of the proceedings of each meeting shall be kept by the secretary to the committee, and shall be circulated to the members, with the agenda for the subsequent meeting.

4. *Subcommittees.*—The committee may delegate any of their functions to a subcommittee appointed by themselves from their own number, which shall report to the committee. Unless the committee otherwise decide, the chairman shall, ex officio, be chairman of a subcommittee.

5. *Chairman.*—At every meeting of the committee or a subcommittee the chairman, or in his absence such other member as is chosen by the members then present, shall preside.

6. *Quorum.*—The quorum of the committee shall be one-third of the number of committee members. A subcommittee shall fix their own quorum.

7. *Voting.*—A question shall be decided by a majority of the votes of the members present voting on that question, and in case of equality of votes the person presiding at the meeting shall have a second and casting vote.

8. *Resignation of membership.*—The chairman or any member of the committee may resign his office by giving notice in writing to the Board of Trade.

9. *Absence from meeting.*—Any member who fails to attend at least one-quarter of the total number of meetings to which he is summoned in any consecutive 12 months, except for some cause approved by the committee, shall be deemed to have vacated his seat, but shall be eligible for reappointment.

MONTHLY REPORT OF A LOCAL ADVISORY COMMITTEE.

Camberwell Juvenile Advisory Committee.

Report for period March 15 to April, 1913, inclusive. Number of schools selected, 54.

	Boys.	Girls.
A. Number of school-leaving forms received—		
For action	149	140
For filing	49	62
B. Children who applied in answer to the summons	50	64
C. Children placed in conjunction with other agencies	3	...
D. S. L. F. children placed by exchange:		
(a) With prospects of learning a trade	30	46
(b) With prospects of permanent work	34	19
(c) Purely unskilled		...
E. Other children placed by exchange:		
(a) With prospects of learning a trade	38	51
(b) With prospects of permanent work	106	21
(c) Purely unskilled	17	1
F. Number of "A" forms issued	64	65
G. Number of "B" reports received	34	30

Appendix March-April, 1913.

Employers' reports issued	97	34
Employers' reports received	74	25
Fresh registrations	247	169
Reregistrations	45	38
Reregistrations after placement	44	12
Live register brought forward	78	46
Live register carried forward	87	56
Total dealt with	327	209
Total placed	225	138
Percentage	69	66

The forms mentioned in the foregoing description of the London work follow, together with an interesting health memorandum from the London County Council's medical officer:

Form No. C. C.

LONDON COUNTY COUNCIL.

EDUCATION OFFICER'S DEPARTMENT.

SCHOOL LEAVING FORM—HEAD TEACHER'S REPORT.

....................School. ....Electoral division.

1. Name..
2. Date of 14th birthday........................ 3. Standard..................
4. Address..
5. Entered school..
6. Probable date of leaving school..
7. General ability and conduct..

....

8. Ability [1]..
9. Height...................... 10. [2] Health (eyes, ears, heart, lungs)............

Date of last inspection..............................

11. (*a*) Sort of employment recommended..
(*b*) Whether further retention at school is recommended.........................
(*c*) What evening class or trade school is recommended.........................
(Signed)........................ (Date)........................
Head teacher.

SCHOOL CARE COMMITTEE'S REPORT.

1. Home circumstances and father's occupation..
2. Parent's wishes as to employment..
3. Scholar's inclinations..
4. Name and address of suitable individual or institution (if any) to keep in touch with child..
5. Name of exchange to which this form or copy is sent..............................

School care committee's recommendation:

(Signed)................................ (Date)................
Honorary Secretary, Children's Care (School) Committee.

Child's first employment on leaving school..

Form A.

LONDON JUVENILE ADVISORY COMMITTEE.

Report to............................children's care (school) committee of action taken by the local advisory committee to be forwarded to person or institution to whose care the child has been referred.

........................Labor exchange.
Address......................................
Date................................

Name........................ Age............ School................
Address..
Nature of work found for applicant..
Whether permanent or temporary..
Hours and wages..

---

[1] Including special ability and reports from instructors in manual training and domestic economy.

[2] To be taken from medical officer's last report.

Name and address of firm..
....

Evening class, technical institute or trade school recommended.....................

Remarks...
....
....

The local advisory committee will be glad if the children's care (school) committee will report to them as to the above in about a month, and subsequently in the months of May and November, or earlier if occasion demands.

A form for the first report is inclosed.

N. B.—If............................falls out of work the visitor should immediately notify the local advisory committee and persuade (him or her) at once to re-register.

To...............................
....
....

Form B.

LONDON JUVENILE ADVISORY COMMITTEE.

Report of........................to whose care the child has been referred by the............................children's care (school) committee.

...............................Electoral division.

...............................Labor exchange.

Address...

Date of issue.......................................

Report as to—

Name.. Age....................

Address...

Nature of work..

Employer..

1. Evening class, technical institute, or trade school attended..................
....
2. Clubs (thrift, social or other) joined by him (or her).............................
....
3. Information obtained from the home as to industrial progress and prospects......
....
4. Remarks...
....
....

Signature..................................

Date...............................

N. B.—In no instance is the visitor to approach the employer without the sanction of the local advisory committee.

Any change in wages or hours of work should be noted.

This form to be returned to............................, secretary of the children's care (school) committee, by whom it will be forwarded to the .... Labor Exchange.

....

Memorandum of the Medical Officer of the London County Council on Health in relation to choice of occupation.

(*a*) It is obviously impossible within the limits of a short memorandum to cover all the points which may arise in regard to the physical fitness of children for employment. The following paragraphs, therefore, are to be looked upon as intended merely to form a general guide to children's care (school) committees. In cases where doubt exists with regard to fitness of a child for a particular employment the committee are reminded that machinery exists whereby the opinion of the school doctor may be obtained. Application should in such cases be made to the divisional medical officer.

It is to be pointed out that under the provision of the Factory and Workshops Act no young person under 16 years may be employed in a factory or in a workshop in which certificates of fitness are obligatory, unless within seven days after commencing work a certificate has been granted on personal examination by the surgeon that the applicant is not incapacitated by disease or bodily infirmity for working daily for the time allowed by law.

The certificate may be qualified by conditions as to the work on which a child or young person is fit to be employed.

At the request of the advisory committee on juvenile employment (in connection with the labor exchange) in certain towns the certifying surgeon has (with the approval of the factory department) undertaken to supply confidentially information as to young persons and children rejected on medical grounds for certificates of fitness, in order that the committee may endeavor to secure suitable employment for such persons and advise parents (where necessary) to obtain medical treatment.

(*b*) Some trades require the possession of an adequate physique, and it should be borne in mind that occupations which demand muscular effort also place a considerable strain upon the heart. A weakly child or one who is reported to have a weak heart would not, of course, be recommended to become, for instance, a blacksmith.

(*c*) The workers in many trades are particularly liable to suffer from respiratory complaints. The death rate from consumption in these trades is unduly high. They comprise, in the first place, those trades which are especially dusty, and, in the second place, those which involve spending much time indoors in ill-ventilated workshops or offices. Children who are reported to have weak chests or who have a bad phthisical family history should be discouraged from entering them. A list of such trades, compiled from the reports of the registrar general, is to be found in the statement given later.

(*d*) Rheumatic fever is often associated with heart disease. Children who have suffered from an attack of rheumatism should avoid occupations necessitating exposure to cold, damp or extremes of temperature.

(*e*) Defective eyesight is likely to lead to inefficiency and over strain in employments in which close work and attention to minute details are demanded. Many of these employments are followed by women.

A low degree of myopia (short sightedness) properly corrected by glasses, will not necessarily render a young person unfit for close work; but a high degree of myopia should be an absolute bar on account of the tendency to progressive deterioration of the vision in these cases. Hypermetropia (long sightedness) and astigmatism are likely to cause much strain and headache, and children suffering from these defects should not enter these occupations.

Ladies' tailoring and waistcoat making for the most part has to be done on dark material, the work must be very fine, and the stitchery invisible.

Ladies' tailoring requires physical strength to manipulate the heavy goose irons in pressing. Coat and waistcoat makers work on their knee instead of a table. Crooked backs, weak hearts, and lack of vitality do not suit these trades.

Upholstery is not so trying or close as tailoring, but is more dusty.

Dressmaking, millinery, and embroidery require good eyesight. There is little physical strain involved in millinery.

Corset making.—Good eyesight is necessary.

Photography requires very good eyesight; long sight and astigmatism should disqualify.

Laundry.—Girls have to work in high temperature; weak chests and rheumatism should disqualify; the wearing of spectacles is a drawback.

(*f*) In certain occupations the danger of accident is greater than usual. The danger is greatly increased by defects of eyesight or hearing, and in cases where there is a tendency to epilepsy. Such children should avoid situations which involve passing in proximity to machinery and also those which involve frequent excursions in the midst of street traffic, climbing ladders, etc. The danger to girls working in many factories of wearing the hair loose, or clothing with flying strings or ribbons, is manifest and may need to be guarded against.

(*g*) In some trades great danger exists from the necessity of handling poisonous materials. Many processes in these trades are strictly prohibited by the Factory and Workshops Act as unsuitable for children under 16; these processes occur in finishing of tiles, white-lead works, various chemical works, etc.

Other occupations involving similar dangers are those of plumber, painter, glazier, lead worker, file maker. Immunity to some extent depends upon habits of strict personal cleanliness. Care committees are in a position to aid in preventing danger from these sources by impressing upon the child entering one of these occupations the importance of never eating with unwashed hands and of never holding tools or nails in the mouth.

The habit of nail biting is of some importance in this connection, and it is of importance to see that the teeth are absolutely free from decay.

(*h*) Many of the foregoing points will be illustrated by a consideration of the following table taken from the registrar general's returns showing the various divisions of the building trades in relation to mortality:

	All causes.	Alcoholism and diseases of liver.	Phthisis.	Diseases of circulatory system.	Diseases of respiratory system.	Bright's disease.
Occupied and retired males	100	100	100	100	100	100
Building trades	93	81	102	92	92	111
Bricklayer, mason	90	79	104	88	103	83
Carpenter, joiner	82	77	80	82	71	94
Slater, tiler	111	91	107	97	112	126
Plasterer, whitewasher, paperhanger.	101	114	114	97	116	83
Plumber, painter, glazier	111	79	114	108	95	211
Cabinetmaker	95	93	122	90	94	100
Sawyer	77	72	65	90	82	66

The figures given in this table are termed "comparative mortality figures"; 100 is taken as the normal rate of death from the various causes amongst the whole of the male population at working ages. In trades where the figure is less than 100 the risk of death from the cause at the head of the table is less than the average, and where the figure is greater than 100 the risk is greater.

Thus it will be seen that the building trade as a whole is a healthy one, that carpenters and joiners are especially healthy, and so are masons and bricklayers except for a slight increase in mortality from phthisis and diseases of the respiratory system; that plasterers suffer more than the others from alcoholism, cabinetmakers from phthisis, and plumbers, painters, and glaziers from diseases of the circulatory system and Bright's disease, no doubt connected with lead poisoning.

STATEMENT.

(i.) Occupations in which mortality from respiratory disease is higher than the average (taken from the registrar general's reports). The occupations with highest mortality are placed first and those with exceptionally high mortality are distinguished by italics:

(a) Dusty occupations—*Cutler, scissors maker, earthenware, file maker, brush, broom maker, hair, bristle worker, chimney sweep, glass manufacturer, furrier, skinner, copper worker, wood turner, nail, etc., manufacturer, brass, bronze worker,* gunsmith, coal heaver, lead, zinc worker, gutta-percha worker, cotton manufacturer, chemical manufacturer, stone quarrier, cycle and motor manufacturer, rope, cord maker, bricklayer, mason, carpet, felt manufacturer, gasworks service, miller, baker.

(b) Occupations necessitating confinement and lack of fresh air—*General shopkeeper, hatter,* bookbinder, printer, hairdresser, tobacconist, shoemaker, textile worker, tailor, cabinetmaker, lock, key maker, law clerk, lithographer, saddler, commercial clerk.

(ii) Workshops to which the provisions of the factory acts with regard to certificates of fitness have been extended—File-cutting, carriage building, rope and twine making, brick and tile making, making of iron and steel cables, chains, anchors, grapnels and cast gear, making of nails, screws and rivets, baking bread, biscuits or confectionery, fruit preserving, making, altering, ornamenting, finishing, or repairing of wearing apparel by the aid of treadle sewing machines.

....

School Medical Officer.

Form C.

LONDON JUVENILE ADVISORY COMMITTEE.

To be sent to the secretary............ advisory committee, labor exchange,

Date ....

Please find suitable employment for the boy girl whose particulars are given below.

1. Name........................ 2. Age ....Years..........Months.

(Surname first.)

3. Address..

4. School...................... 5. Date of leaving.................................

6. Standard..........

7. Details of employment. (Give last employment first.)

Employer.	Trade.	Employed as—	Time with.	Left.	Hours.	Wage.	Reasons for leaving.

8. Employment desired...

9. Evening trade or technical schools attended...................................

Subjects taken..

10. Home circumstances, and father's (or guardian's) occupation.................

....

....

....

11. General remarks on the conduct, qualifications and general ability of boy girl ....
....
....

12. Special qualifications..
....
....

13. Name and address of suitable individual or institution (if any) to keep in touch with boy girl ....

Signature of person recommending..
Address...

Form AA.

London Juvenile Advisory Committee.

.... Labor Exchange.
Address...
Date..

Name.............................. Age........ School..................
Address...
Nature of work found for applicant..
Whether permanent or temporary..
Hours and wages...
Name and address of firm..
Evening class, technical institute, or trade school recommended...........
Remarks...

The local advisory committee will be glad if.......................................
will report to them as to the above in about a month, and subsequently every six months, or earlier if occasion demands.

A form for the first report is inclosed.

N. B.—If the boy (or girl) falls out of work, the visitor should immediately notify the local advisory committee, and persuade him or her at once to reregister.

........................*Secretary.*
................*Local Advisory Committee.*

To............................
....
....

Form BB.

London Juvenile Advisory Committee.

..............................Labor Exchange.
Address...
Date of issue.......................................

Report as to—
Name.. Age..................
Address...
Nature of work..
Employer..

1. Evening class, technical institute, or trade school attended..........
2. Clubs (thrift, social or other) joined by him (or her)................
3. Information obtained from the home as to industrial progress and prospects........
....

4. Remarks..

Signature..............................

Date..............................

N. B.—In no instance is the visitor to approach the employer without the sanction of the local advisory committee.

Any change in wages or hours of work should be noted.

This form to be returned to..................................*Secretary*

of the Advisory Committee

..................*Labor Exchange.*

As a matter of interest there is added a specimen set of forms used in some districts in connection with aftercare work:

AFTERCARE.[1]

[Private and confidential; to be retained by the visitor.]

Name............................Age..........Address....................

School............................Employment (Give date)....................

Firm..

Hours, wages, etc..

Further education..

Remarks..

..................*Secretary.* ....*19* .

ADVISORY COMMITTEE FOR JUVENILE EMPLOYMENT.

....

..................19 . ...

....

SIR (or MADAM): I am desired by the advisory committee for juvenile employment to ask if you will be so good as to supply them from time to time with a brief report upon the boy or girl with regard to whom details are given in the accompanying form. Special slips are inclosed for this purpose.

The committee would in particular be glad to be informed upon the following points:

1. General welfare, including home circumstances.
2. Circumstances of employment, with note of any change.
3. Further education. The school attended, or any special reasons for nonattendance, should be shown.
4. Any special needs which it may be within the power of the committee, either directly or indirectly, to meet.

If out of work, the boy or girl should be urged to re-register at the exchange, and information should be sent to me. In no case should the employer be approached without the committee's sanction.

I am, yours, faithfully,

....

Secretary.

---

[1] Space for "visitors' notes" on the back.

V. BIRMINGHAM.

Nowhere in England will be found a more intelligently executed plan of helping children start in life than in the city of Birmingham. The education committee through its central care committee has built up an organization of school care committees which now covers nearly the whole of the city. The scheme operates under the Choice of Employment Act and was approved by the board of education in consultation with the Board of Trade in July, 1911. An integral part of the Birmingham scheme is the chain of juvenile labor exchanges distributed at central points throughout the city, in the management of which there is the closest cooperation between the school and Board of Trade officials. A corps of nearly 1,500 men and women, called helpers, undertake to interest themselves in the individual children and their parents who use the labor exchanges. During the first 17 months nearly 11,000 applications were received from employers, and 7,000 children under 17 years of age were placed, besides numbers of other cases in which the helpers themselves undertook to counsel and place the children.

Birmingham is fortunate in the variety of its skilled occupations. Although there is a vast amount of unskilled work, likely to increase with constant improvement in labor-saving machinery, yet the metal trades, the printing trade, and other industries offer satisfactory opportunities to a large number of workers. To some degree, therefore, the problem of starting young workers in Birmingham is less severe than in Liverpool or London. Nothwithstanding these relative advantages, however, a study of the Birmingham enterprise only strengthens the conviction which comes to every student of vocational guidance work anywhere, namely, that placement for children under 18 is at best a makeshift so long as the public neglects to put in force certain fundamental social policies through legislation, which policies will be discussed in the closing chapters.

These fundamentals, it should be said, are keenly appreciated by the men and women who are devoting themselves to the youth of Birmingham. About 13,000 boys and girls leave the elementary schools in that city each year; most of them are absorbed by offices, factories, workshops, and warehouses. The need of guidance and training is apparent as soon as the careers of these children are scrutinized. To meet this need, the following plan, in active operation for more than two years, is in charge of the central care committee which devotes its attention to the industrial problems of boys and girls from the time they leave school until they are 17 years of age. This committee consists of six members of the education committee, four representatives of teachers, three of employers, three of workmen, four social workers, the school medical officer, and others. The committee carries on its work through two sets of agencies (1) the juvenile employment exchanges, and (2) school care committees.

1. THE CENTRAL JUVENILE EMPLOYMENT EXCHANGE.

This is in charge of an officer specially appointed by the Board of Trade on account of his knowledge, training, and fitness for dealing with the employment of juveniles. He attends the meetings of the central care committee and acts in consultation with their officer.

The chief work of the exchange is:

(1) To receive and register applicants for employment from youths and girls under 17 years of age.

(2) To receive and register applications from employers for juvenile employees.

(3) To endeavor to place the applicants for employment in the situations for which they are best suited and in which they are likely to be most successful.

The exchange is in a good position to select the applicant, because both the exchange and the central care committee have accumulated an immense amount of information about the various trades of the city, and so can advise as to wages, prospects, and conditions in any trade. It knows what trades lead to regular and improving work, and can caution against bad conditions and prospects.

By the time a child applies for a post, the officials above mentioned will have in their possession a report concerning it from the head teacher of its school, from the school medical officer, and from the school care committee helper. In the first 12 months 7,180 applicants were received from employers, and 4,907 were filled.

For the convenience of parents and juvenile applicants five branch exchanges have been opened in various parts of the city.

2. SCHOOL CARE COMMITTEES.

The scheme provides for the appointment of a school care committee for each elementary school in the city. Many schools thus have their own care committees. In a number of cases it has been found advisable to group several neighboring schools under one care committee. These committees consist of school managers, teachers, and others who are prepared to interest themselves actively in boys and girls. The members are assigned as "helpers" to a small number of children each. The helper is put in touch with the boys or girls about three months before they leave school, and at once tries to set up a friendly relation with the parents as well as with the children by visits to the home or by other means. The children are encouraged to talk about what they would like to be, the parents about what they have in view. When there are vague or unsuitable proposals for a child's employment, or no plans at all, the parents and the child are urged to attend at the juvenile employment exchange, and thereby to find the best available post for which the child is suited. To rouse the sense of parental responsibility, to lead the well-meaning but uninformed parents to industrial knowledge and right action, to encourage the choice of skilled employment rather than employment with no prospect of advancement for the boy—these are among the helper's aims on the industrial side, while the employment exchanges provide the means of giving effect to the school care committee's work.

The helper endeavors to keep in touch with the boy or girl for about three years. This, as regards employment, is necessary to counteract the aimless drifting or the capricious change from job to job, to give encouragement to face and overcome difficulties, to see that, if changes are advisable, they are made for the youth's benefit and do not give rise to intervals of disastrous unemployment.

The conditions under which boys and girls are employed are in many places quite unsatisfactory, and have a bad effect morally or physically, or both. Information is gathered by the central care committee and the juvenile employment exchanges, which some day doubtless will be used to improve these conditions.

FURTHER EDUCATION AND KINDRED INFLUENCES.

The helper takes an interest, and stimulates the parents' interests too, in further education of the boys and girls. They are urged, where the hours of work allow, to join classes at the technical schools, schools of art, evening continuation schools, or at such institutions as may be most suitable to the individual cases.

Some school care committees concern themselves with the means of recreation and assist with boys' or girls' clubs.

Again, meetings of parents are held from time to time, such as have already been organized by several school care committees; also meetings of boys and girls about to leave school or who have recently left. These meetings are found to be valuable means of rousing interest in the future well-being of the children.

The helper's notebook is an interesting device for keeping track not only of the children but of the helper's effectiveness as well. These notebooks when carefully employed are a veritable store of social information. The inside of the cover of each book is printed in the manner indicated on pages 68 and 69. Blank pages are inserted for the helper's notes, the width of which is such that the edges reach the vertical line. The ruled lines for the notes continue the horizontal printed lines of the cover. It is thus unnecessary to print the "headings" on each page, and the "fillers," or blank pages, may be easily renewed.

The duties outlined by the Birmingham education committee for the school care committees are given in full as they clearly indicate the nature of the work expected of each committee:

DUTIES OF SCHOOL CARE COMMITTEES.

1. Members of school care committees should do their best to influence the industrial history and character of the children under their care by insuring that more account be taken of the needs of individual cases and of the general conditions of industry than is possible at present. They should also encourage the wider use of educational institutions of all sorts after the age of compulsory attendance has been passed. Further, they should not only try to influence the child, but also the parents, whose cooperation and support is in the long run absolutely essential.

2. Any person who is already taking an interest in boys or girls between the ages of 13 and 17, or who is otherwise in close touch with families with children of that age, will become ipso facto members of the care committee of the school to which the child belongs or belonged.

3. Three months before a child leaves school the responsible helper and the head teacher will confer together as to the child's future, and then consult with and advise the child and its parents. Should a further interview be thought advisable, it would be held one month before the child leaves school. These interviews can take place wherever most convenient.

4. When a child has left school and started work the helper shall keep in effective touch with him and his home, and shall continue to advise and encourage him and his parents in every way. (The frequency of his visits or interviews will, of course, vary with the troublesomeness or ignorance of the case.)

5. It is most important that the helper should take care to keep himself informed of all changes in the work and of the home conditions of the child, and report immediately to the secretary of the school care committee—(where a child has left work) the date and cause of leaving; (where a child has started work) the employer's name and trade, nature of work done by the child, wages (piece or day), hours (short time, casual, extra long hours).

It is also desirable to have a general report on the child's progress in work and character twice a year.

6. The helper should give every encouragement to the child to use the juvenile employment exchange to which his school is attached.

7. When the helper needs information about a child under his care he may apply to the secretary of the school care committee for access to the confidential records.

8. The helper should attend his school care committee meetings, when he may bring up individual cases in which he has difficulty in deciding what to advise. Helpers will *not* be expected to bring up ordinary cases.

9. Where a helper is brought into touch with unsuitable conditions in any trade, or with any other problems connected with child labor, he may bring the matter up for discussion at the next school care committee meeting. If considered advisable, the school care committee will send up a report on the matter to the branch committee, who shall in turn forward it, with their comments, to the central care committee. Until branch care committees are formed the report would be sent direct to the central care committee.

(1) Child's name. (2) No.

Address......................

School.........................

(1) Standard.
(2) Date of leaving.

Home conditions.............

Father's occupation..........

Mother's occupation.........
(if any)

No. in family—
(1) over 14; (2) under 14.

Social or other organization......................

Evening school or classes child promises to attend.

(1) Promise or (2) Plans for employment.

Will application be made to the J. E. Exchange.

Dates of visits................

[Cover of note book; left.]

REMARKS AND NOTES.

SUGGESTIONS TO SCHOOL CARE COMMITTEES AND HELPERS FOR FILLING UP HELPER'S REPORTS.

[The references in these suggestions are to the helper's report cards.]

1—Members of school care committees and helpers will recognize that it is most important that the greatest care be taken to preserve the strictly confidential character of the teacher's reports and helper's reports, and to guard against their loss. It can be readily seen that friction and other disagreeable consequences might arise between head teachers and parents in some cases if the remarks of the former were known to the latter, and similarly the work of school care committees and helpers would be hampered, and probably rendered impossible if the helper's reports were not in careful keeping, and always treated as strictly confidential.

2—The first particulars as to "School," "Standard," etc., can be filled in from the head teacher's report.

3—With regard to "Date of leaving," helpers should guard against giving or countenancing the idea that a child may leave school before the date of legal exemption.

4—The entry under "Home conditions" should be brief observations of the home, evidence of care, or lack of it, in bringing up children, etc.

5—Under No. 4 on the helper's report card should be given the name of any club or organization, whether religious, social, educational, or recreative, with which the child is connected.

6—As to No. 5, it is important to bring home to parents and children the necessity of continued education. Probably the teacher's report card will give the name of the evening school or other classes which the child has promised to attend. If so, the helper can give valuable encouragement, and fortify the child in its intention to go to evening school and to continue there. If the head teacher's report does not record a promise, the helper should make special efforts to obtain one.

7—If the child has a definite promise of employment, please enter "Yes" after 6 (1), and give under 7 particulars of the employment promised. If the child has no definite promise, but plans have been formed for the child's employment, enter "Yes" under 6 (2), and then give particulars under 7.

8—With regard to 8, it is most important that free use be made of the juvenile employment exchange, in order that the work of school care committees, helpers, etc., may bear full fruit. Hence, if the child has no definite promise of or plans for work, it should be urged to register at the employment exchange, 168 Corporation Street, or one of the branches. Even if there is employment in view, and this does not appear satisfactory, the child should still be persuaded, if possible, to ascertain by application at the exchange whether something better can not be obtained.

[Cover of note book; right.]

9—Under "General remarks" may, of course, be entered any observations of importance for which provision is not made elsewhere. Amongst other things, the helper's estimate of the degree of necessity for after care and of the frequency of subsequent visits would be useful. Naturally, some cases will need almost constant attention, with frequent visits, while others will require very little.

10—As Record of Further Education (see reverse side of form) in the column headed "Subjects or course," if a student is taking one of the recognized courses, the entry "Preparatory," "Commercial," "Technical (or Industrial)," "General," "Domestic," as the case may be, will be sufficient, or the individual subjects may be entered.

11—If a student leaves during the session, the reason for leaving, if ascertained, should be entered in the last column. At the end of a session or term an entry as to progress made will be useful. Head teachers of evening schools will be pleased to cooperate with school care committees, and visits or inquiries will be welcomed.

12—As to Record of Employment, the space for some of the entries may be found insufficient, but there is no objection to two lines being used for each situation; for example, the name of the employer could be put on one line, and the address on the next in the third column.

13—In column 4 should be entered the general designation of the trade, and in column 5 the description of the particular branch or phase of the trade in which the child is engaged.

14—In the last column, the entry "Exchange" will be sufficient if the employment was obtained through the juvenile employment exchange; "School," if through the agency of the school; "Self," if the employment was obtained by the child or its parents.

15—It is often very important to know why a boy or girl has left a situation, or how he or she is getting on in it. Hence, it is hoped that entries on these points will be made under "General remarks."

16—In cases where changes of occupation are so frequent, and conditions such that the ordinary helper's report form does not provide sufficient space for record, a supplementary helper's report form should be used.

17—Great discretion and tact will be needed in obtaining the information for the helper's report. Any visit should be made in a friendly way, and as a *helper* indeed. If found advisable, the information can be obtained gradually, and so entered. In most cases a series of direct questions on a first visit would be regarded as highly inquisitive, and might give positive offense.

18—In ordinary cases the helper's first report on any child should be sent to the honorable secretary of the school care committee in time to allow of its being sent to the education department a month before the child is expected to leave school.

FURTHER EDUCATION.

{Evening school or class attended by child..........

{Date of (1) entering (2) Leaving

Subjects or course...........

{Progress or reason for leaving....................

EMPLOYMENT.

Name of employer.............

Address of employer.........

{Date of (1) Commencing (2) Leaving

Trade and nature of work..

{(1) Weekly wage (2) Daily hours

How employment obtained..

{Progress or reason for leaving......................

REMARKS, NOTES, AND INFORMATION ON CHANGES OF EMPLOYMENT, ETC.

At the inception of the Birmingham work the cooperation of the chamber of commerce was secured for the purpose of inquiring among the employers representing the leading trades of the city as to the conditions, requirements of different trades, and the possibilities of further training for the young work people. The questionnaire used in that inquiry deserves republication and is here given:

INDUSTRIAL TRAINING INQUIRY.

Name of firm..
Address of firm...
Trade...
Branches of trade carried on or particulars of goods manufactured.........
....
....

1. *Employers' requirements.*

(1) Is there a sufficient supply of trained workmen, or do you have difficulty in getting them?

....

(2) (*a*) For what different branches of work do you employ boys in your trade?

....

(*b*) How long would it take an average boy to learn each branch?

....

(*c*) At what age should he begin?

....

(*d*) What special characteristics are most needed?

....

(3) (*a*) Do you want general capacity and training depending on dexterity, powers of observation, self reliance, initiative, and adaptability?

....

(*b*) Or do you require only mechanical skill?

....

(4) (*a*) Would there be any opening for youths if given all-round training in your trade?

....

(*b*) Or do you want only specialization in parts of it, or in single processes?

....

2. *Supply of boys:*

(1) Do you have any difficulty in getting boys?

....

(2) How do you get boys—through the labor exchange, by newspaper advertisement, or by window or works notice?

....

(3) (*a*) About how long do boys stay with you on the average?

....

(*b*) Is it long enough to learn the trade?

....

(*c*) What hold have you over the boys, or what means of control?

....

(4) (*a*) Are the boys you get satisfactory?

....

(*b*) If not, in what way are they unsatisfactory?

....

(5) Do you suffer from the frequent changes of jobs common amongst Birmingham boys? What do you consider to be the cause of the frequent changes?

....

(6) Is there anything objectionable to boys in your trade? If so, have you any suggestions for removing objections or making the trade more attractive?

....

3. *Schemes of training:*

(1) Is there apprenticeship? Or any other definite agreed scheme for training?

....

(2) If so, give details—premium (if any), commencing wages, raises (amount and time), indentures (if any) or other agreement.

....

(3) Give criticisms or suggestions for amendment.

....

(4) Is there any subsequent improvers' stage? If so, give particulars.

....

(5) (*a*) Is technical instruction of any use?

....

(*b*) Have you any scheme of cooperation with any technical school, evening schools, or other educational institutions?

....

(*c*) Give general statement of what is wanted and criticisms of existing classes.

....

(6) What modification (if any) of the present elementary school curriculum would you suggest to fit boys to enter your trade?

....

4. *Prospects of boys:*

(1) What number of boys and youths (say 14 to 18) does your firm employ?

....

(2) What number of men?

....

(3) (*a*) Can your trade absorb all the boys you employ when they become men?

....

(*b*) If so, at what?

....

(4) (*a*) If not, what percentage (or proportion) is absorbed?

....

(*b*) At what age do the others drop out?

....

(*c*) Do you know what becomes of them?

....

(5) From what other sources are your men recruited, if not from boys who have been in the trade?

....

(6) (*a*) What becomes of machine minders?

....

(*b*) What is the class of boy doing this work?

....

(*c*) How long on the same machine and what arrangements for acquiring progressive experience of machines?

....

(7) If any special interest is taken by the management in the boys, what form does it take; e. g., treatment in the works, helping them to learn the trade, continuative education, and generally taking account of the doings and progress? Are there any special instructions to foremen on this?

....

5. *Hours and wages:*
   (1) Hours—
      (*a*) What is the usual number of hours worked per week?

....

(*b*) What are the ordinary daily hours? From ...... to ......

(*c*) What, if any, seasonal variation of hours?

....

(2) Wages—

(*a*) What are the commencing wages of boys (apart from apprentices already dealt with in 3 (2)).

....

(*b*) What are the usual subsequent raises (state amounts and periods or ages)?

....

(*c*) Does piecework apply at all to boys and youths? If so, please give average earnings in piecework at different ages.

....

(*d*) Does "subcontracting" affect the boys and youths? If so, give particulars.

....

6. *General observations.*

The following documents give a good insight into the workings of the school care committees:

CENTRAL CARE COMMITTEE.

Report of the Conference between Members of the Central Care Committee and Honorary Officers of School Care Committees.

The second half yearly conference between members of the central care committee and the honorary officers of school care committees took place at the Education Offices, Margaret Street, on Tuesday, November 26, 1912.

There were present 69 ladies and gentlemen representing the central care committee, two branch care committees, and 40 school care committees and subcommittees. Eighteen school care committees and subcommittees were not represented

Councilor Norman Chamberlain, chairman of the central care committee, presided.

The agenda of 12 items consisted, with two exceptions, of matters submitted by school care committees themselves for discussion. The following notes and recommendations are given on the items seriatim.

1. *Old scholars' clubs.* (Farm Street, etc., school care committee.)

After the usefulness of old scholars' clubs in the work of the school care committtes and the desirability of the central care committee providing facilities for meeting had been briefly advocated, the chairman announced that rooms in schools could be used free of rent, but subject to payment by the clubs of the caretaker's fee. The central care committee had tried to secure the reduction of that fee, or the power to pay it, but the present had been shown to be an unsuitable time to press for this concession.

2. *Apprenticeship.* (Farm Street, etc., school care committee).

In reply to inquiries, the chairman announced that the central care committee was about to begin an inquiry into the whole question of industrial training, including apprenticeship, in Birmingham.

3. *Clerical work.* (St. Thomas's school care committee.)

Mr. Birch and other speakers said that the amount of clerical work falling upon honorary secretaries was very heavy, and that unless it could be reduced, or at least its increase arrested, it would become impossible for honorary secretaries to cope with it. It was agreed that several forms recently supplied had appreciably reduced clerical work in certain directions. The following suggestions were made:

(1) That the heading of the helpers' reports should be filled in at the office before issue.

(2) That where a committee deals with more than one school, a registrar be appointed for each school or department.

(3) That the cards for summoning meetings be sent from the office.

4. *Return of helpers' reports.* (Bournville and Stirchley school care committee.)

The discussion showed that the difficulty of getting in the helpers' reports is very great and a serious problem. Helpers who have taken cards or to whom cards have been sent have in numbers of cases failed to attend meetings or to send in their reports, even after repeated requests. One honorary secretary had been able to obtain the return of only 20 reports from 93 cases.

Suggestions.

(1) Councilor Lord urged the necessity of holding meetings monthly on a recognized day, of handing out new cases then, and calling for reports on cases taken out at the previous meeting. This had proved useful in establishing the habit of attendance in the Sparkbrook district.

(2) That on the next issue of helpers' report cards a note should be printed requesting the return of the report by a specified time. (The chairman stated that this had been done.)

(3) That helpers should be supplied, where the honorary secretary deems it necessary, with stamped envelopes for the return of the reports by post.

(4) That head teachers be requested to use every possible means to obtain and give the correct name of the organization to which a child belongs.

(5) That honorary secretaries send to the central care department the name of any organization which does not return the helpers' reports.

5. *Second reports.* (Sparkbrook school care committee.)

Mrs. Jesper urged the necessity of the helper being in close touch with the child at the actual time of leaving school and commencing work, and of submitting a second report as soon as the child is placed at work. This is the critical time.

6 and 7. *Branch care committees.* (Sparkbrook school care committee.)

The formation of branch care committees was advocated, so that school care committees should cooperate and not work as separate units possibly in some matters in competition with one another. It was further advanced that it was a good arrangement to hold all meetings in a district on the same evening in the week but in different weeks for different committees. The chairman said the policy of the central care committee had so far been to set up branch care committees as soon as the demand for one arose in a district, and to leave school care committees freedom to make their own arrangements as to meetings.

8. *Periodical bulletin.* (Camden Street, etc., school care committee.)

Mr. Mackenzie moved that the central care committee be recommended to issue a quarterly bulletin to helpers, giving instructions, notes and information concerning the school care committees and their work throughout the city. Many helpers are unable to attend meetings regularly, and either they lost touch with the work, or the honorary secretary had to send out periodically his own bulletin compiled from various communications, circulars, etc., received from the central care department.

The opinion was expressed that the bulletin, if issued, should be supplied gratis and sent direct by post from the central care department. It would relieve the honorary secretaries considerably and would keep the interest of helpers alive.

Recommendation (carried by 11 votes to 8, the majority not voting): "That the central care committee be asked to issue such a bulletin quarterly."

9. *Head teachers and the juvenile employment exchange.* (Camden Street, etc., school care committee.)

Mr. J. T. Booth, on behalf of his committee, raised the question whether the time had not now arrived when all applications from employers for boys and girls should be referred to the exchange. He stated that in numbers of schools very few, if any, children were placed through the exchange. Some head teachers would like to be relieved of the responsibility of sending children to work on request from employers, and also many children did not get the advantages the exchange might give them. Several head teachers spoke against the suggestion, and the feeling of the conference being against such a step at present, the matter dropped.

10. *School leaving age.*

The conference closed with announcements by the chairman concerning forthcoming lectures to helpers, the first by Mr. C. E. B. Russell, of Manchester. There was not time to deal with the concluding item of the agenda, viz: the present state of the central care committee's work.

CENTRAL CARE COMMITTEE.

Juvenile Employment Exchanges and Domestic Service for Girls.

Report of the special committee appointed to consider the draft scheme for the appointment of a domestic service subcommittee of the central care committee, to act with the juvenile employment exchange in placing girls between 14 and 17 years of age in domestic service.

Your committee met on February 5, 1913. * * *

The subcommittee were unanimously of opinion that full advantage should be taken of the permission now granted by the Board of Trade to juvenile employment exchanges to undertake, under certain conditions, the placing of girls in domestic service, and they accordingly recommend that measures be taken to commence such work as soon as possible. This recommendation is made on the following grounds:

(1) The local education authority has, through the medium of the exchange, been able to give guidance and assistance to girls leaving school in taking up every class of employment except domestic service, yet domestic service is a suitable occupation and one to be encouraged under proper conditions.

Both head teachers' and helpers' reports indicate domestic service as desired and desirable in a number of cases. It is inconsistent to refuse the helper and the child the same assistance as is available in every other occupation.

(2) The existing means and organizations for bringing employers and young girls desiring domestic service into touch with each other are inadequate.

(3) Judicious aftercare is desirable in the case of many girls placed in domestic service.

(4) Such a subcommittee would be able to ascertain what exactly are the facilities in the city for training girls for domestic service, and to make suggestions for extension and improvement from time to time.

Your committee examined the draft scheme, which in its general lines has already been approved by the central care committee, and are of opinion that but little alteration is necessary. They recommend that the subcommittee should consist of 20 members, instead of 12 to 16 as previously suggested, and that its constitution should be:

4 Members of the central care committee.
4 Representatives of the girls' friendly society.
2 Representatives of the Young Women's Christian Association.
2 Representatives of Roman Catholics.
1 Representative of Graham Street School.
1 Representative of the ladies' committee of the Sunday School Union.
7 Representatives of branch care committees and school care committees, one to represent each existing branch care committee, and one to be appointed from each of four other districts of the city.

Additions to the draft scheme, as referred to the subcommittee, are recommended to make clear (1) that the subcommittee shall have power to appoint or approve visitors, and (2) that in cases of girls placed by the juvenile employment exchange who belong to or may join certain organizations, e. g., the girls' friendly society or the Young Women's Christian Society, the supervision or aftercare shall be referred to the organization concerned, subject to such reports being made as the subcommittee may deem advisable.

The scheme embodying the suggested amendments would be as follows:

1. That a domestic service subcommittee be appointed, consisting of 4 members of the central care committee, 4 representatives of the girls' friendly society, 2 representatives of the Young Women's Christian Association, 2 representatives of Roman Catholics, 1 representative of Graham Street School, 1 representative of the ladies' committee of the Sunday School Union, 7 representatives of branch care committees and school care committees (one to represent each existing branch care committee and one to be appointed from each of four other districts of the city); and that the subcommittee have power to appoint or approve visitors.

2. That the functions of the subcommittee be as follows: (1) To make recommendations from time to time to the central care committee on matters of general policy. (2) To establish a rota, one member to be present at the exchange at such times as shall be arranged for the purpose of advising upon the placing of domestic servants.

3. The duties of the member present will be: (1) To discuss the vacancies notified to the exchange. (2) To offer such advice as she may deem desirable to the exchange officer. (3) To report on the work done to the next meeting of the committee. (4) To report to the committee any cases requiring special investigation.

4. The duties of the committee at its weekly meeting will be: (1) To receive a report as to the week's work. (2) To receive notifications from the rota members as to vacancies of which they have advised acceptance on their own responsibility. (3) To consider the vacancies referred to them for further investigation. (4) To arrange for any investigation that may be necessary with regard to these vacancies, and for the result of such investigations to be reported at once to the exchange. (5) To receive and consider reports on such vacancies as have been specially investigated. (6) To arrange for such supervision as may be necessary of the girls placed by the exchange, referring girls who belong or may become attached to the girls' friendly society and Young Women's Christian Association and similar organizations to these organizations for supervision and report. (7) To receive the reports from the helpers who have undertaken such supervision.

5. To confer twice yearly with the ladies acting as helpers in the case of girls placed in domestic service by the exchange, and with others specially interested in the question of domestic service as an occupation for girls and in the training necessary for it.

REPORT OF THE EXECUTIVE COMMITTEE TO THE CENTRAL CARE COMMITTEE.

To be presented at a meeting of the central care committee to be held on Monday, April 7, 1913, at 5 p. m.

1. *Domestic service subcommittee.*—The five organizations which were invited to cooperate with the central care committee in placing young girls in domestic service through the juvenile employment exchange have all intimated their willingness to do so, and to nominate representatives on the subcommittee. * * *

2. *Health week.*—It is the desire of the "health week" committee that the central care committee and the school care committees should assist in any way open to them in the propaganda of "health week" which commences on April 27. Your chairman has invited the honorary secretaries of school care committees to take part in a conference on the 11th instant, and to discuss the most effective means of helping in the work.

3. *Head teachers' reports—health section.*—The hygiene subcommittee have considered the resolution of the central care committee asking whether arrangements could be made for the final medical examination of school children to take place sufficiently long before the date of leaving to allow entries by the medical officers to be made on all head teachers' reports, which are forwarded to the office about four months before the children leave school. In response the hygiene subcommittee have passed the following resolution:

> That the central care committee be informed that this subcommittee will place at their disposal the schedules of all children who have been examined prior to their leaving school, but that the examinations will have extended over the whole year and will not necessarily have taken place four months before the children leave school.

Your committee consider that the proposed alteration would give approximately only the same result as before, and would involve a much greater amount of work in the central care department than the present arrangement gives the medical staff. They therefore recommend that the hygiene subcommittee be informed that the central care committee would prefer the continuance of the present system.

4. *Free admission to evening schools.*—The attention of the technical education and evening schools subcommittee was invited to the recommendation of several school care committees to the effect that there should be means available to school care committees to obtain free admission to evening schools for children in cases where the investigations of the committees showed that children were actually prevented from attending such schools by inability to pay the fees. The technical education and evening schools subcommittee on the 10th of March resolved as follows:

> That the central care committee be informed that this subcommittee are submitting to the education committee at its meeting on the 19th March an amended scheme of free admission to the evening and technical schools of the city.

This scheme has now been approved by the education committee, and empowers head teachers of day schools to award a certain number of free admissions to evening schools. There is also provision for award to scholars already in evening schools of free admissions to subsequent sessions of evening schools and to technical schools. Your committee recommend that a communication be sent to head teachers requesting that in making their award of free admissions they will have due regard to the recommendations of school care committees.

5. *Industrial arrangements in East Birmingham.*—The East Birmingham branch care committee have been successful in getting into touch with several of the large firms in the locality and securing their representation on the branch care committee, and on several school care committees. This action prepared the way for arrangements which have been provisionally completed with the Metropolitan Carriage & Wagon Building Co. (Ltd.), and the Wolseley Tool & Motor Car Co. (Ltd.), according to which these firms will engage all their juvenile employees through the juvenile employment exchange, giving preference to those recommended through the school care committee system of the district. Both firms will give facilities for the boys to attend evening schools and classes, and will encourage them to do so.

6. *Gathering of helpers at Uffculme.*—Through the kindness of Mr. Barrow Cadbury the application for the use of Uffculme for a gathering of helpers on September 6 next has been successful. Your committee have appointed Miss Barrow, Councilor Chamberlain, and the Rev. H. S. Pelham to make the necessary arrangements in due course.

7. *Trades for physically defective children.*—In response to a request from the special school after care employment subcommittee your committee recommend that in the pamphlets on local trades now in course of preparation an appendix be inserted giving advice in regard to suitable employment for deaf and physically defective children. The subcommittee mentioned will so far as possible furnish the matter for the appendix.

8. *Receipt of grant from board of education.*—The board of education have paid to the education committee the sum of £236 7s. 3d., being the board's contribution toward the salaries of the executive officers, from the approval of the scheme in July, 1911, to December 31, 1912.

9. *Assistant caretakers.*—It will be remembered that some time ago the central care committee made representations to the sites and buildings subcommittee concerning the position of assistant school caretakers, recommending that the practice of discontinuing their services at the age of 21 years should be abandoned, and that if suitable they should be employed until they could be absorbed as caretakers. The sites and buildings subcommittee were unable to see their way to make the arrangement suggested. Your committee have now learned that the subcommittee have decided to make such appointments in future subject to termination at 19 years of age.

10. *Pamphlets on trades for boys.*—Your committee have had before them a complete set of penny guides to trades and handicrafts for youths and girls leaving school, issued by George Phillip & Son, (Ltd.), of which about 20 have been published. They feel that a set comprising the books on each of the local trades would be of much value to the school care committees, and they therefore recommend that sufficient sets be purchased to furnish one set to each school care committee.

11. *Return based on head teachers' reports.*—The following is a statement compiled from the head teachers' reports received during February in respect of children due to leave school before the end of June:

	All schools.				Schools with care committees.			
	Boys.	Girls.	Total.	Per cent.	Boys.	Girls.	Total.	Per cent.
Number of cards received	516	514	1,030	....	359	331	690	67.0
Number of children attached to some organization	337	360	697	67.7	242	247	489	78.7
Number of children who promised to attend some evening school	279	154	433	42.0	199	110	309	44.8
Number of medical reports appearing on head teachers' reports	192	210	402	39.0	135	138	273	39.6
Number of those examined requiring medical attention	26	46	72	19.9	21	28	49	18.0

Number of cards marked with discriminatory letter	937, or 91 per cent.
Number of cards marked A	183, or 19.5 per cent.
Number of cards marked B	384, or 41 per cent.
Number of cards marked C	370, or 39.5 per cent.
Number of cards not marked	93, or 9 per cent.

School standard attained by children expected to leave school during June, 1913.

Number of cards marked, 954, or 92.6 per cent of total cards sent in.

Number of children in—

	Per cent of total.
Ex-seventh standard	51, or 5.3
Seventh standard	332, or 34.8
Sixth standard	288, or 30.2
Fifth standard	176, or 18.4
Fourth standard	81, or 8.5
Third standard	20, or 2.1
Second standard	6, or .7

12. *Return of employment obtained during February.*—The following is a statement concerning employment obtained during the month of February:

School children obtaining employment.	Total.	Percentage.
Number of children reported as having obtained employment on leaving school	752	....
Reported by head teachers as having obtained employment through medium of the school	57	7.5
Obtained employment through the juvenile employment exchange	190	25.3
Reported by head teachers as having obtained employment by their own or their parents' efforts	505	67.2

13. *Juvenile employment exchange return.*—The following figures have been supplied by the juvenile employment exchange in respect of the four weeks ended Friday, March 28, 1913, viz:

	Applications by boys and girls.			Vacancies notified by employers.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.
Central exchange	206	53	259	279	87	366
Jewelers' exchange	33	42	75	40	92	132
Aston exchange	39	45	84	39	34	73
Handsworth exchange	36	10	46	15	24	39
Selly Oak exchange	41	45	86	20	37	57
Sparkhill exchange	28	22	51	5	14	19
Total (4 weeks)	383	218	601	398	288	686
Corresponding totals for February, 1913 (4 weeks)	509	384	863	466	367	833
Corresponding totals for March, 1912 (5 weeks)	601	320	921	496	235	731

Vacancies filled by employment exchanges.

	Vacancies filled.			Vacancies filled by children direct from school.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.
Central exchange	173	44	217	50	22	72
Jewelers' exchange	25	19	44	10	9	19
Aston exchange	18	34	52	4	6	10
Handsworth exchange	2	17	19	....	7	7
Selly Oak exchange	19	35	54	8	22	30
Sparkhill exchange	5	4	9	....	....	....
Total (4 weeks)	242	153	395	72	66	138
Corresponding totals for February, 1913 (4 weeks)	308	253	561	98	92	190
Corresponding totals for March, 1912 (5 weeks)	304	153	457	....	....	84

14. *Helpers' reports.*—The number of helpers' reports received from school care committees during each of the last six months is as follows:

	First reports.	Second reports.	Total.
October, 1912	316	....	316
November, 1912	702	141	843
December, 1912	403	107	510
January, 1913	278	19	297
February, 1913	449	28	477
March, 1913	513	95	608
Total	2,661	390	3,051

The relation of the Birmingham teachers to the scheme herein outlined is real and active. Many head teachers use commendable care in the reports on the children who leave school. These reports indicate the groups of children which in the teacher's judgment need a good deal of aftercare, those which need only a moderate amount, and those which need no aftercare except perhaps as to continued education. For the first eight months during which these records were kept, nearly half of about 9,000 cases were referred to the school care committees, which in turn called upon the helpers for assistance. Many organizations in Birmingham, particularly those interested in boys, have been enlisted in the scheme. Here social workers and teachers, as is the case in Boston, New York, Cincinnati, and other cities, have been giving their time and their energy generously to the work. Parents' meetings are carried on by many school care committees. Employers are often the speakers at such meetings.

It should be borne in mind that the Birmingham experiment coincides with an unusual state of industrial prosperity. There are more vacancies than there are boys. Such trades as the engineering, brass, jewelry, and silversmiths can not secure enough apprentices. They are glad to have the juvenile employment exchange select workers, even for the more advanced positions. This is due somewhat to the improved quality of the applicants who come to these labor exchanges. It has been the practice of teachers even in cities where labor exchanges are maintained to look after the brightest children themselves, or the favorites of the school, and leave to the labor exchange the difficult children. Obviously this is not cooperation. In Birmingham, on the other hand, many of the schools make a point of advising all the children who leave school to go with their parents to the exchanges. There is still a good deal of placement by the schools, and it is greatly to be hoped that this will in time diminish, if not wholly disappear.

With reference to girl labor, Birmingham presents the problem characteristic of our own American cities. The girls desire office work and too many take courses in shorthand and typewriting. The start in life for these girls is difficult indeed and the outcome quite unsatisfactory. The market for stenographers and office workers is overstocked. The element amongst whom the exchange renders its most useful service is that group of girls who, desiring a manual occupation, have been guided into the better trades, such as bookbinding, leather stitching, etc. As in the case of the boys, there is a great demand for girl labor. The city has not adequately faced, and few cities have faced, the problem of vocational training for girls. Two useful handbooks have been issued by the central care committee as part of a series on the principal trades and occupations in Birmingham. One deals with the various trades for women and girls; the other on printing and allied trades. There is much effort to secure continued training in evening schools for the children placed.

An idea of the occupations for boys and girls and the number placed from June 1, 1911, to October 31, 1912, may be gained from the tables which follow, but it should be explained that the figures with reference to the messengers, stable boys, etc., apply mostly to boys over 16, and that many of the employers have placed the boys in these positions after an understanding with the labor exchange officials that advancement was fairly certain after a few months.

Juvenile employment exchange return showing the number of vacancies notified and the number of vacancies filled, classified under different trades or occupations.

The numbers refer to all children placed from 14 to 17 years of age in the period June 1, 1911, to Oct. 31, 1912.

Trades and occupations.	Vacancies notified.	Vacancies filled.
OCCUPATIONS FOR BOYS.		
Telegraph messenger service	83	80
Art, music	26	18
Hotel service	151	104
Business clerks' work	481	346
Van boys, stable and groom work	170	115
Warehouse	384	235
Messenger and porter service	581	434
Rolling mills	115	90
Tube manufacture	42	34
Pattern making	11	7
Iron-foundry work	47	18
Brass-foundry work	554	286
Blacksmithing	42	7
Engineering (general)	323	269
Polishing (metal)	270	183
Drilling, milling	374	302
Toolmaking	148	119
Gun manufacturing	24	22
Wire drawing	25	14
Miscellaneous metal work	328	181
Cycle manufacture	71	37
Motor car manufacture	24	14
Goldsmith, silversmith, and jeweler work	383	168
Electrical apparatus making	40	29
Carpentering and joining	143	76
Painting and decorating	55	20
Plumbing and gas fitting	139	49
Cabinet making	45	23
Upholstering	26	9
Woodcarving and engraving	19	11
Other work in wood	29	11
Glass manufacture	75	43
Soap manufacture	21	18
Rubber work	33	23
Leather-goods work	28	11
Printing and bookbinding	175	92
Tailoring	22	7
Bootmaking	23	8
Baking and biscuit manufacture	33	16
Greengrocery	27	8
Cocoa and chocolate manufacture	151	150
Butchering	25	9
Brewing	28	19
Electrical engineering	62	48
OCCUPATIONS FOR BOYS—continued.		
Laboring	239	122
Miscellaneous employments[1]	175	80
	6,270	3,965
OCCUPATIONS FOR GIRLS.		
Domestic service (daily girls)	21	10
Laundry	50	24
Daily service	135	70
Clerking	118	96
Warehouse	724	511
Errand-girl service	83	17
Core making	21	20
Polishing, brass	26	19
Press, drill, and capstan work	629	456
Screw working	15	8
White-metal working	94	43
Lacquering	125	91
Soldering	30	18
Cycle making	65	45
Jewelry working	148	64
General factory working	58	12
Electrical working	39	21
Weighing apparatus making	15	18
French polishing	45	20
Upholstering	22	17
Cartridge making	270	267
Candle making	13	11
Soap making	16	15
Rubber work	53	50
Leather work	69	50
Paper bag making	50	33
Printing	128	70
Bookbinding	15	10
Draping	15	10
Tailoring	47	13
Dressmaking	35	18
Machinists' trade	36	25
Button making	68	67
Cocoa and chocolate making	667	638
Japanning	23	15
Shop service	73	23
Factory work	280	85
Miscellaneous employments[2]	171	83
Total	4,492	3,063

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[1] Under this heading have been included all trades and occupations in each of which less than 7 boys were placed. They include architecture, photography, gardening, assistant caretakers, railway service, colliery workers, die sinking, lamp making, motor and carriage building, ironmongers, scientific, surgical, weighing and electrical instrument making, bricklaying and plastering, brick and tile manufacture, French polishing, manufacturing chemists, candle and grease manufacture, paper, envelope, and cardboard box manufacture, drapery and clothing trades, japanning, pawnbroking, and various dealers.

[2] Under this heading have been included all trades and occupations in each of which less than 7 girls were placed. They include pupil teacher, theater service, telephone service, pen makers, wireworkers, opticians, shroud makers, glassworkers, brush makers, rope and canvas workers, milliners, mineral-water manufacture, restaurant workers, pawnbrokers, etc.

Returns showing the vacancies filled by children direct from school through the exchange.

The numbers are given in respect of the various trades and occupations, and cover the period Jan. 1 to Nov. 30, 1912.

BOYS.	
Telegraph messenger service	80
Drawing offices	10
Hotel service	10
Office work	114
Van boy and stable boy work, etc	3
Warehouse	32
Messenger (preliminary to various trades)	84
Gardening	2
Tube mills	2
Rolling mill	3
Brass working	28
Blacksmithing	1
Engineering (mechanical)	54
Polishing (metal)	6
Tool making	46
Gun making	5
Miscellaneous metal trades	23
Cycle trade	5
Motor trade	9
Jewelry, silversmiths, etc	55
Electrical fittings manufacture	12
Carpentering and joining	13
Plumbing and gasfitting	8
Furniture, cabinetmaking, etc	10

BOYS—continued.	
Glass trade	3
Rubber manufacture	8
Leather manufacture	3
Brush trade	1
Printing, bookbinding, etc	30
Tailoring	3
Boot trade	2
Cocoa and chocolate manufacture	85
Grocery work	2
Electrical engineering	12
Laboring in factories	9
Total	683

GIRLS.	
Pupil-teacher work	1
Theater service	1
Laundry-maid service	2
Day servant work	21
Clerk work	50
Warehouse-girl service	104
Errand service	6
Florist service	1

The following circulars issued by the central care committee are of interest:

CITY OF BIRMINGHAM EDUCATION COMMITTEE.

CENTRAL CARE COMMITTEE.

To boys about to leave school;

1. You will be leaving school very soon—in a few months probably. It is most important that you should carefully choose the kind of work you want to do.

2. Talk *over now* with your parents and your teacher what sort of work you would like, and what would suit you best.

3. Think of the future. There are many well-paid jobs for boys which end when you are 17 or 18 years old, and which do not train you for anything else. If you go to work of this kind you will find it very hard to make a fresh start at 18. You will probably be out of work a good deal, and have low wages when you are a man.

4. Try to become a skilled workman. Learn a trade if you get the chance. Your wages will very likely be less while you are learning the trade, but you will be much better off later on. Aim at being a first-class workman, and do not be satisfied to become only half-skilled.

5. If you or your parents want to know more about different trades and occupations, go to the Employment Exchange for Boys at 168 Corporation Street, or to the exchange nearest to you. If you want help in getting a suitable situation, call at the exchange a week or two before you leave school and get your name put on the register. Ask your parents to go with you.

6. Some one from the school care committee will very likely call at your home to talk over your future with you and your parents, and to help you in any way he can.

7. Stay at the day school as long as you can. When you leave, join some evening school or class, and choose those classes which will help you in your work. What you learn will be a great help to you.

8. If your situation is a good one with a promising future, stick to it through thick and thin. Even if you think it is not a good one, do not leave it until you have got something really better.

9. Before leaving ask advice from your parents, your old schoolmaster, or your care-committee friend. Also go to the exchange some Friday evening between 6 and 7 p. m.

10. If you are out of work, go to the exchange any morning. The manager will be glad to see you and to help you to get a suitable situation. But beware of moving from place to place without good reason. It is sure to be a bad thing for you in the end if you do this.[1]

CITY OF BIRMINGHAM EDUCATION COMMITTEE.

CENTRAL CARE COMMITTEE.

Juvenile employment—A word to parents.

To what work do you intend to put your children when they leave school? What trade or other calling have you in view for your boy, what employment for your girl? What are they best fitted for, and likely to succeed in? Have you carefully thought the matter out, and made the best possible plans? These questions are of the greatest importance to you and your children.

Many of you are probably undecided. Some of you perhaps do not fully know what the commerce and industries of the city have to offer in the way of employment for juveniles.

The education committee, acting with the Board of Trade, have adopted a big scheme for giving you information and for helping you to place your children in situations to the greatest advantage.

A central juvenile employment exchange has been opened in Corporation Street, with branches in different parts of the city. Your boys and girls up to 17 years of age are cordially invited to call at the exchanges when in want of a situation. You and they should go there when in need of information and advice about employment. Especially should you consult the exchange if you have a child who will be leaving school soon, and it is best to go some weeks before the child is due to leave.

You may ask why there is any need to change the present way in which children find work, i. e., by their friends or relations speaking for them, by looking in the papers, or by walking round the different factories in the district.

It is quite clear that you will have a larger number of situations from which to choose at our exchanges, as most of the good employers all over the town will be getting their workers from them. Your child will thus be more certain to get there a situation suited to its health, its powers, and its personal ambitions. If a child gets a job for which it is fitted and which it likes, it will do better and be happier than if it has to take a job in the casual and uncertain way which is now usual. Nor will it take so long or mean as much tramping about and so many useless inquiries as now.

You will also be able to find out more correctly and more fully the conditions and prospects in any trade, for the ladies or gentlemen in charge of the exchanges will always be glad to give you advice if you care to ask them.

In many of the schools we are also starting care committees, whose members will take a personal interest in the child during the first three or four anxious years of its working life. They will take especial trouble with children when they are about to leave the day school for good. Just before this happens some member of the care committee, perhaps already known to you, will be only too glad to talk over with you and your child the plans for the future; the teachers, too, have very kindly promised their help. This will be very useful to you, as they have great opportunities of finding out the sort of work at which the child will be happiest and do best.

We are also hoping that the care committee will be able to arrange for meetings of parents, when the different trades can be discussed and questions asked.

Everyone realizes that the way a child starts on its working life will settle its whole career, and that the time is the most important in its whole life. Unless a child starts at the work for which it is best suited from the point of view of health, character, and ability, it will suffer throughout its life, and will be deprived of a real chance of success. Unless a child begins to learn a trade young, it will never learn it well. It is to help those parents who realize this, and to arouse those few who do not yet realize it, that we are starting this scheme, and we hope very much that you will support it in every way you can.

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[1] A list of exchanges follows with the hours when open.

VI. GLASGOW.

Child-welfare activities in Scotland have for years enjoyed the advantage of the interest of women's organizations. The Scottish council for women's trades has been for a long time studying the various occupations open to girls. In its various branches have centered some of the most interesting guidance activities of Scotland. Perhaps the one person above all others to whom credit is due as the prime inspiration of this service, not only in Scotland but in England as well, is Mrs. Ogilvie Gordon, of Aberdeen. For nearly a decade Mrs. Gordon has been pioneering in what she calls "educational information and employment bureaus." In March, 1904, Mrs. Gordon, in a Glasgow lecture, suggested that school boards establish bureaus for the purpose of guiding boys and girls into suitable employments on leaving school and supervising their careers, so far as possible.

Her handbook of employments for the use of boys and girls, published in 1908 and prepared with the assistance of expert social workers in Glasgow, Edinburgh, Dundee, and other cities, has been the model for similar publications in other countries.

As has already been indicated, the Choice of Employment Act is operative only in England and Wales. The education act of Scotland, 1908, prepares the way for vocational advisory services in the Scotch school boards. With the establishment of labor exchanges in Scotland there has been an effort to work out a cooperative scheme between the Scotch Education Department and the Board of Trade, similar to the English plan.

The education (Scotland) act, 1908, which became operative on January 1, 1909, empowered school boards to maintain or combine with other bodies to maintain "any agency for collecting and distributing information as to employments open to children on leaving school." Thus it became possible for school boards to use, in their discretion, money from the school fund for this important purpose, and the Scotch Education Department has in two circulars, dated August 27, 1909, and August 10, 1910, respectively, impressed upon all Scottish boards the advisability of taking action. No special grant of money was, however, allotted for such purposes. It should be noted that the act refers to information as to employments.

The phrase might or might not be held to cover the detailed work of registration for specific vacancies.

There is a juvenile employment advisory committee which represents the school board of Glasgow and the labor exchange. Probably the main feature of this committee's work, as it is of every other such committee in Scotland, is the effort to promote attendance at continuation classes of young workers between 14 and 17 years of age. The forms and reports from Glasgow are similar to those already printed and to the Edinburgh material which is given in full. Therefore the account of the Glasgow work will necessarily be brief.

An interesting catechism in manuscript has been prepared dealing with the work and the policies of the Glasgow advisory committee, and is worth printing.

ADVISORY COMMITTEE FOR JUVENILE EMPLOYMENT IN CONNECTION WITH THE GLASGOW AND DISTRICT LABOR EXCHANGES.

Summary of answers by subcommittees to chairman's questions.

QUESTIONS.	ANSWERS.
1. What is the object of interference by the Board of Trade labor exchanges on behalf of—	
(A) Young persons seeking employment?	(A) To assist young persons seeking employment to choose suitable employment and to give advice and assistance to the Board of Trade in this connection with respect to the management of the labor exchange.
(B) Persons seeking to employ young persons?	(B) To help employers to find suitable young persons whom they may employ.
(C) Young persons not seeking employment and who ought to be at work?	(C) To induce young people to seek employment and to help them to obtain it. It is suggested that the "aftercare" committees might undertake this function.
2. What is the number of young persons leaving school between 14 and 17, and arriving in the city from outside— (A) Who find employment for themselves? (B) Who apply to the labor exchange— (1) and find employment (2) but who fail to find employment or refuse employment offered? (C) Who do not find employment for themselves, and who do not apply to the exchange?	Regular information is furnished by the school board to the exchange of all young persons leaving school and the records of the exchange supply the answers to the three branches of this question in respect of children leaving elementary schools in Glasgow. Certain outside boards are also supplying this information.

Summary of answers by subcommittees to chairman's questions—Continued.

QUESTIONS.	ANSWERS.
3. How far is interference possible or desirable in respect of—	
(A) Choice or retention of employment?	(A) Compulsion ruled out as neither possible nor desirable. Information should be given regarding good and bad employments and peaceful persuasion used to induce the choice and retention of good and the rejection of bad employments. It is considered that these furnishings do not fall within the scope of the officials of the labor exchange; that they fall within the scope of the advisory committee, but the committee is not at present in possession of sufficient knowledge to perform those functions. It is desirable to inform juveniles in every branch of employment of the future prospects in that employment.
(B) Preparation for industrial employment, specific or general?	(B) Cooperation with education authorities recommended for preparation for industrial employments whether specific or general. Observation of statistics recommended for the acquisition of the necessary experience.
(C) Securing an "opening"?	(C) The advisory committee might make inquiry as to openings in the colonies and other countries in addition to its present arrangements.
(D) Instructional facilities after employment?	(D) Cooperation with education authorities recommended.
(E) Physical conditions of employment?	(E) It is considered that in respect of young persons employed in factories and workshops they are sufficiently looked after by the factory inspectors. If it should be found that there are dangerous trades not scheduled under the factory acts information may be tendered to the home office so as to have the omissions rectified. The committee might consider the advisability of appointing medical inspectors to examine the physical conditions of young persons in employment. Occupations should be classified with special reference to the number of juveniles who can be absorbed on reaching maturity.
(F) Health during employment?	

Summary of answers by subcommittees to chairman's questions—Continued.

QUESTIONS.	ANSWERS.
4. In cases where interference occurs, what are to be the channels of operation in respect of—	
(A) Cooperation with young persons?	(A) School managers acting through teachers and "aftercare" committees.
(B) Parents, guardians, education authority, and factory inspectors?	(B) The education authorities have shown their willingness to cooperate with the advisory and district committees.
(C) For children of idle and thriftless parents, orphans, paupers, defectives, etc.	(C) The cooperation of poor-law authorities, industrial schools, public-health authority, police, education authority, churches, charitable institutions, should be sought as occasion arises, e. g., the poor-law authorities should be consulted with regard to defectives, public-health authority informed with regard to insanitary residences, police authority should be asked to deal with any cases involving criminal misdemeanor.
5. How far is it desirable to employ voluntary assistance in dealing with the work of the exchange?	The employment of voluntary assistance is desirable so long as persons assisting are persons of skill and experience and are subject to the control or supervision of the advisory committee. The appointment of school committees is recommended.
6. In advising young persons with respect to educational arrangements from the point of view of the exchange what are the general lines to be followed? e. g., Are the young persons as a rule to follow "trade lines" or are they to seek development on lines distinctly removed from their daily occupations?	Young persons as a rule ought to follow the course of training in the principles of their occupation.
7. How far is it desirable to persist in the literary education of young persons who have failed to secure the merit or qualifying certificates?	The committee will be glad to have the school authorities consider this question.
8. What is to be the relation of the exchange to young persons, who having found employment, are compelled to attend continuation classes? What is to be the point of contact between the exchange and the education department, in respect of this and other matters?	This question has not been answered.

Summary of answers by subcommittees to chairman's questions—Continued.

QUESTIONS.	ANSWERS.
9. To what extent are educational grants available for the training of young persons who have to work during their industrial training?	The committee is unaware of any grants directly available.
10. Are there any bursaries available for the assistance of young persons at work?	Yes. There are many, certain of them are detailed in the minutes. A list of available bursaries is recommended to be kept at the exchange.
11. What is to be the policy of the exchange in respect to "trade instruction?"	
Should the exchange endeavor to meet the deficiency in supply by securing by cooperation with education department instruction in trade work?	Yes.
12. How far is it desirable to consult the wishes of the employer in respect to education?	It is desirable to consult the employers in respect to matters of education.
Should the employer be asked to select the young persons and cooperate in their training from the time of selection of employment, or should the advisers of the young persons deal with the individuals more especially from the individual standpoint?	
13. Should the labor exchange organize an official inspection of young persons whose training is being carried out under the advice and supvision of the exchange?	Not answered.
14. What may be taken as a "general" classification of employments in the Glasgow district? e. g. (1) Directly productive industries. (2) Indirectly productive industries, such as transport of materials. (3) Occupations auxiliary to production and transport. (4) Distributive industries. (5) Clerical and commercial service. (6) Communal service. (7) Domestic service.	This question is answered by the census returns which have been specially prepared for the committee.

Summary of answers by subcommittees to chairman's questions—Continued.

QUESTIONS.	ANSWERS.
15. Are there any employments which are suitable as temporary means of earning a livelihood during preparations for more permanent occupations?	Yes; but proper supervision is recommended while the young person is occupied in such employment.
16. Are there any employments which should be scheduled as unsuitable for young persons?	Yes.
17. What are the general lines on which the exchanges should proceed in distributing applicants to the various classes of employment, and how, and by whom are these lines to be applied to the individual applicants? e. g., Is it advantageous that the young person should follow an occupation similar to that of the parent?	Not answered.
18. Is the labor exchange to contemplate the provision of a supply of "unskilled labor" from the ranks of those who are under its guidance?	Not answered.
19. At what stage should differentiation of young persons in respect of their suitability for the various occupations be made?	At the stage of leaving school.
20. What should be the organic connection with employers, e. g., (1) In respect of young persons employed in "suitable" industrial work? (2) In public services of conveyance and transport? (3) In work which tends to prevent young persons from being suitably prepared for earning a livelihood after 17 years of age?	Not answered.
21. How are the remainder to be dealt with; i. e., those young persons who being willing and able to work fail to find suitable employment in their own district. Should they be encouraged to leave home to find employment? Should the exchange contemplate emigration?	If there is a surplus of labor of orphans and others whom it may be desirable to separate from their parents they might, as a general rule, be encouraged to emigrate under arrangements with colonial governments, but the sending of lads or girls from decent homes should not be encouraged.
22. What are the legal resources for dealing with young persons under clause 4 (C)?	The solicitors to the board of trade can be consulted as need arises.

Summary of answers by subcommittees to chairman's questions—Continued.

QUESTIONS.	ANSWERS.
23. Do the advisory committee desire the service of a special commissioner to assist them in formulating a policy by making special inquiry into the conditions of employment, etc., in this district, and of the questions raised in connection with the initiation of the work of the committee?	Not at present; but the consideration of subjects proposed for the investigation by a commissioner should be considered.
24. What is the effect upon employment of "defectives" of the employers' liability and workmen's compensation acts?	The effect is a considerable reduction of opportunities for labor to either the mentally or physically defective.

A summary of the topics considered at 10 meetings of the advisory committee during the years 1911–12, will give a clear idea of its activities:

ADVISORY COMMITTEE FOR JUVENILE EMPLOYMENT IN CONNECTION WITH THE GLASGOW AND DISTRICT LABOR EXCHANGES.

June 8, 1911, to June 30, 1912.

(Ten meetings of the committee were held.)

Subjects.

Appointment of subcommittees.
Statistical statements and records.
Laws relating to education and employment of young persons.
Leaving cards.
Facilities at exchanges.
Arrangements with G. P. O.
Migration and emigration.
School committees.
Cooperation by Board of Trade solicitors secured.
Law publications secured.
Limitation of operations to juveniles who register at exchange.
Reports on methods of dealing with juveniles by school board.
Departmental committee on night work.
Correspondence with central exchange.
Census special report secured copy requisitioned for each member.
Cooperation with school boards.
Voluntary school committees and social and charitable agencies secured.
Twenty-four special questions by chairman considered, and, for the most part, answered.
Returns from school authorities classifying children leaving school and limitation of operations to those who register.
Influx of juveniles from outside areas.
Information to school authorities on employment.
Particulars of physique added to boys' records.
Cooperation of civic guilds.
Weekly issue of lists of vacancies to schools.
Cooperation with country boards.
Undesirability of casual employment as a permanent resort.
Conference with associations of employers, discussed and deferred.
District committees recommended.
Reports of school board operation regarding employment.
Attention of school authorities directed to labor exchange facilities.
Census returns of employments.
Handbooks of employments.
Application to trade societies for wage rates and hours recommended.

Subjects—Continued.

Conference with school boards agreed upon, Partick Civic Guild and Boy Scouts invited to attend.
Preparation of information as to employments arranged.
Study of reasons for failure to obtain employment.
Suggestion of special offer to deal with failures.
Adoption of all cases of difficulty in finding employment after registration.
Investigation by visits and personal interviews on difficult cases.
Causes of difficulty encountered.
"Indifference."
"Poverty" physical and mental defects.
Cooperation with school authorities, poor law authorities, and charitable bodies considered.
Study of law relating to children.
Free postage of inquiries.

A sample of the records in the juvenile labor offices of Glasgow is here given because of the observations noted with reference to each applicant:

BOARD OF TRADE LABOR EXCHANGES.

ADVISORY COMMITTEE FOR JUVENILE EMPLOYMENT IN CONNECTION WITH THE GLASGOW AND DISTRICT LABOR EXCHANGES.

Statement as to juveniles who found employment in trades other than those for which they registered.

JANUARY 17, 191-

1 Reference number.	2 Age of applicant.	3 Occupation for which registered.	4 Occupation in which "placed."	5 Remarks.
		A.—BOYS.		
		1. Glasgow labor exchange.		
1	15	Apprentice tailor	Attendant in public baths.	Physically unfit for tailoring; fairly intelligent; desires to learn trade.
2	16	Bootmaker	Warehouse boy	No vacancies for trade desired.
3	15	Apprentice tinsmith	Message boy (temporary).	Indifferent; was previously employed by relative.
4	15	Apprentice plumber	Message boy (grocer)	Indifferent; will call when age limit reached.
5	14	Apprentice brass finisher.	Message boy	Small of stature; poor physique; unsuitable for trade.
6	14	Apprentice tailor	Apprentice upholsterer	Jew; difficult to place in consequence.
7	16	do	do	Satisfied.
8	15	Apprenticeship (printer preferable).	Message boy, with a view to entering branch of engineering.	Superior applicant.
9	14	Message boy	Apprentice model maker.	
10	15	Warehouse boy	do	Do.
11	16	Indefinite	Apprentice sawyer	Satisfactory.
12	16	do	Apprentice glazier	Do.
13	16	Van boy	Spirit store	
14	14	Factory worker	Apprentice cork cutter.	
15	16	Warehouse boy	Apprentice tinsmith	
		2. Partick labor exchange.		
1	16	Apprentice plumber	Message boy	Diminutive stature.
2	15	Apprentice fitter	Apprentice cooper	Unsuitable for engineering trade.
3	16	Apprentice cooper	Apprentice coach-painter.	Undecided, but now doing well.
4	16	Apprentice grocer	Apprentice coach trimmer.	Do.
5	14	Apprentice electrician.	Apprentice plumber	By request of guardian.
6	15	Apprentice sheet-iron worker.	Handy lad in engineering shop.	Unsuitable for trade desired, as undersized.
7	16	Apprentice compositor	Message boy	Unsuitable; unintelligent.
8	15	Apprentice fitter	Van boy	Fairly suitable, but no opening at present; being kept in view.
9	15	do	do	Unsuitable; unsettled.
10	15	do	Message boy (until opening in desired trade).	Suitable.

Statement as to juveniles who found employment in trades other than those for which they registered—Continued.

1 Reference number.	2 Age of applicant.	3 Occupation for which registered.	4 Occupation in which "placed."	5 Remarks.
		A.—BOYS—Continued.		
		3. Parkhead labor exchange.		
1	14	Apprentice tinsmith	Van boy	No vacancies meantime.
2	15	Message boy	Hairdresser	
3	14	Van boy	Basket factory worker.	
4	14	.....do	Apprentice cooper	Do.
5	14	Apprentice engineer	Bottle worker	
		4. Govan labor exchange.		
1	14	Office work	Apprentice sawyer	
2	14	Message boy	.....do	
3	14	Helper in sawmill	Van boy	
		B.—GIRLS.		
		Glasgow labor exchange.		
1	16	Shop girl	Warehouse girl	
2	14	.....do	Hosiery machines	
3	16	General work	Restaurant	
4	16	.....do	Hotel worker	

VII. EDINBURGH.

The best known of all the advisory and placement schemes is probably that which has been developed in Edinburgh. The thorough articulation of the advisory, placement, and continuation school activities, all fortunately centered in one place, namely, in the offices of the Edinburgh School Board, has materially helped the work in that city. Able school officials and an excellent advisory committee have centered their energy for the past two years on the promotion of the central information and employment bureau. The Edinburgh plan deserves detailed consideration.

As the result of conferences with social workers, educators, and such women as Mrs. Ogilvie Gordon, the school board decided early in 1908 to establish a bureau for vocational assistance. In that year the Scotland act empowered the school boards to use money from the school fund. No special money was, however, allotted. Information was the main purpose of the bureau. The organizer of continuation classes, whose work had brought him for several years in close touch with employers, was placed in charge of the new bureau. The first effort of the organizer was to direct those who were leaving for work to the opportunities of the evening continuation classes. In 1910 the Board of Trade opened a labor exchange in Edinburgh. This at once placed two agencies in the field, with much danger of duplication of labor. The school board's bureau had for some time done work of placing young people with employers, and was in fact largely used by employers who had vacancies to fill.

The problem of cooperation became a pressing one and was solved in a way apparently satisfactory to the interests concerned. A statement clearly defining the functions of the two agencies was then issued and deserves quotation. It is substantially as follows:

EDINBURGH SCHOOL BOARD.

Cooperation between the Educational Information and Employment Bureau and the Labor Exchange.

I. The question of the allocation of the duties and functions of these two organizations has been under consideration for some time; and the possibility of rivalry and overlapping of work has been clearly felt. It is therefore evident that some attempt should be made to arrive at a concordat by which the respective spheres of operation shall be defined. If the problem of registration be considered, it is plain that no solution will emerge unless the two bodies involved come to a specific agreement in the matter; and the employer and the parent have a right to expect that such solution be found at an early date. Two officers for juvenile registration in the same city would be very undesirable, and though strong arguments may be advanced on both sides, the public will expect that the balance of advantage should be ascertained and given effect to. A similar argument will apply to the other aspects of the work—advice to juveniles, promulgation of information as to the conditions of employment in the district, relation of juvenile labor to the system for further education. The need for a working arrangement is obvious both from the point of view of economy of public money and from that of healthy civic and industrial organization.

The problem is not a local one merely, though it arises at the moment from the conditions in Edinburgh. It is of national importance; for on the one hand labor exchanges exist throughout the country, and on the other, employment bureaus managed by the public educational authorities may, in a few years, be widely established under existing law in Scotland and proposed law in England and Wales. It is therefore desirable that a solution applicable to the whole country should be found, and this should be done at an early date before the authorities concerned commit themselves to steps which may have to be retraced. That Edinburgh may help toward this general solution is clear, if the fact that it was the first education authority in Scotland to establish a bureau be borne in mind. The actual experience of the working of such an organization in a city where a highly developed system for further education exists must necessarily be of great value. Further, it would be preferable that Edinburgh should propose a solution than that one should be imposed from either the Scotch education department or from the Board of Trade.

II. The problem of demarcation may be best considered if the functions of a juvenile employment organization are stated. These are briefly as follows:

1. Advice to juveniles as to the pursuits for which they are by ability, taste, character, and education suited.
2. Advice to juveniles as to the opportunities which exist in the various occupations.
3. Collection and promulgation of general information in regard to industrial conditions.
4. Registration, i. e., bringing into contact the employer with a specific position to to offer, and the juvenile suited for and desiring such a position.
5. The supervision, in certain cases, of the juvenile after he has obtained employment, so that he is induced to take advantage of all educational facilities pertinent to his work, and is advised as to the various steps in his industrial career.
6. The keeping of the system of further education in real touch with the industrial needs of the locality.

III. It will readily be admitted that in regard to Nos. 1, 5, and 6, the education authority should be the responsible body. All the special knowledge of the teachers is at the disposal of the education authority, the parents have looked to the schools and to the headmasters for advice and guidance during the school period of the juveniles, the further education of adolescents is closely related to their employment, and generally the education authority already possesses so much of the field that these further areas naturally fall in. In regard to No. 5, it may be specially remarked that many education authorities are now establishing systems of local care committees, which exercise a supervision over all the philanthropic work of the schools, and the board has under consideration the formation of such committees as a system of care committees for the feeding work. These committees are obviously in a strong position to continue, after the school period, that activity which they have exercised during the years of compulsory attendance. A committee dealing with only one school may become a repository of knowledge of all the conditions of the child population flowing through that school, and may unify all the beneficent activities which stream upon it. Supervision of after employment and advice as to educational opportunities would appropriately fall within the scope of action of these committees.

On the other hand, No. 3 (collection and promulgation of information in regard to industrial conditions), evidently should be the duty of the labor exchanges. So much of this work is already done in connection with adult labor, and the business is so largely a study of economic conditions, that the education authority would not be justified in attempting it.

It is in the case of Nos. 2 and 4 that doubt arises, and that, therefore, detrimental competition might occur. On No. 2 (advice to juveniles as to general conditions of employment) it might be argued for the education authority that it is in loco parentis, that the juvenile is in any case coming for advice on other subjects (e. g., No. 1), that it has a knowledge and control of the whole outflow of juvenile population, that because children form its special business it can give to them a regard that the labor exchange, concerned mainly with adults, never will; that it can make a special study of the problem of juvenile employment on a higher plane than a body whose success is mainly measured by its rapidity in filling vacancies and placing applicants; lastly, that the body already in possession of functions Nos. 1, 5, and 6 should, for reasons of organic unity of working, take the others.

For the labor exchange, it may be said that its peculiar function is knowledge of industrial conditions, that it can draw upon the material collected over a wide area, that it can promote healthy fluidity of labor, because it is part of a national organization; that the juvenile after all becomes the adult within at most four years, and that the separation of juvenile and adult must not, if the industrial system is to be continuous, be pressed too far. Reasoning similar to this will apply on both sides to the remaining function No. 4 (the question of registration), with this added, on the one side that the employers are already in close and sympathetic relation with the education authority through the continuation class system; and on the other, that they are already in close and sympathetic relation with the labor exchange through their demands for adult labor.

IV. The balance of argument in regard to No. 2 seems to lie with the education authority, especially if it is borne in mind that juvenile labor must not be considered merely as an economic asset to be moved wherever demand arises. It is probably well that juvenile labor should remain in its locality and under the influences of the home, the city, and the educational system which have brought it thus far. If this be admitted, the argument that the labor exchange is national and the education authority bureau local loses much of its significance; for the local survey then becomes sufficient for the end aimed at. In any case, it would be perfectly easy for the labor exchange to place all its collected information and considered conclusions at the disposal of the education authority.

No. 4 only remains, and here a compromise is suggested. Registration is preeminently the function of a labor exchange; but there is an advantage in keeping juvenile registration in a separate office from adult registration and in bringing a juvenile registration dealing with the whole outflow from the schools into close contact with the other parts of the work of the education authority's bureau. These points would be met if the registration clerk and machinery remained part of the organization of the labor exchange but were housed in the same office as that of the bureau. Close cooperation would thus be established; parent and employers would deal in one office with all the parts of the problem of juvenile employment, and yet the education authority on the one hand and the labor exchange on the other would each deal with that side of the work which was distinctively and naturally within its scope. This suggestion, due to Prof. Lodge, appears to lead to a satisfactory solution of this difficult and pressing problem.

In drawing up this memorandum careful consideration has been given to the special rules with regard to juvenile applicants published by the board of trade February 7, 1910, to the views of Mrs. Ogilvie Gordon ("Introduction to handbook of employments"), a pioneer in working out this problem, to the study of the subject by Mr. Frederic Keeling ("The labor exchange in relation to boy and girl labor"), and to the valuable data afforded by the actual operation of the Edinburgh Bureau.

The proposals in the foregoing memorandum were accepted by the Scotch Education Department and the Board of Trade and are now in successful operation. The items numbered 1, 2, and 3 were reserved for the school officials. The employment features were left to the labor exchange. Parents and children who come for advice and for situations report at school headquarters, where the organizer of continuation classes and exchange officer are on hand to render the service required. Under the 1908 act Scotch school boards may fix dates for leaving school. In Edinburgh children are permitted to leave to work only on the 1st of March, May, September, and December. The operation of the Edinburgh plan is as follows:

Several weeks before the next fixed date for leaving, each headmaster fills cards giving particulars of age, physical condition, ability, attainment, and employment desired, for all pupils who will leave. Each card also contains the opinion of the teacher as to the occupation for which the pupil is suited, notes as to proposed employment, suggestions for further education, and spaces for general remarks. These cards are sent in to the education officer, who files them in a cabinet.

Meanwhile the fixed date approaches. The parents of pupils leaving school are often invited to an evening meeting at the school. They are addressed by members of the board and by teachers. To these parents, and also to those who do not come to the meetings, a circular letter is sent.

The consequence is that a large number of boys and girls come to the board office to follow up the card. The candidate first goes to the exchange officer's room and receives his card stamped with the reference number of the occupation desired. He passes to the education officer's room and has a talk about his aims, his further education, and the suitability of the career for which he has expressed a preference. The parents are urged to be present at this interview, but unfortunately do not always respond. The boy or girl then passes back to the exchange officer's room, and is definitely registered as a candidate for a particular kind of employment. The cards of those who have made this personal application are separated from the others, and they receive priority in filling vacancies.

A circular letter is sent to employers informing them of the joint arrangement and requesting their cooperation. When the employer writes or telephones asking for candidates for a certain position, the register of personal applicants is first consulted. Details of the request and also of the candidates sent are entered on the employers' card. Beyond the two sets of cards (both of which are filled by the exchange officer, but are always open to inspection of the education officer) no other registers are kept.

Both the education officer and the exchange officer make systematic visits to employers, the former to study industrial conditions of the employees, and to gain ideas for improving the continuation classes; the latter to bring to the employers' notice the facilities for securing suitable workers through the exchange.

The following circulars are sent to parents and children:

EDINBURGH SCHOOL BOARD.

DEAR SIR OR MADAM: The members of the board desire to call your special attention to the steps which they are taking to guide and advise young people regarding their future careers in life, and to provide for them the systematic training on commercial or industrial lines that will best fit them for the occupation which they elect to follow.

(1) Educational Information and Employment Department.

The Education Department has recently pointed out that it has been matter of frequent complaint that through want of information or proper guidance children, on leaving school, are apt to take up casual employments, which, though remunerative for the moment, afford no real preparation for earning a living in later life. The temptation to put a child into the first opening that presents itself is often very great. Due regard is not always paid to the capacities of the boys and girls concerned, with the result that many take up work which affords no training and is without prospect, while many others are forced into trades or professions for which they are unsuited by temperament and education, and for which they consequently acquire a dislike. The result is a large amount of waste to the community at large and misery to the individuals concerned.

In order to cooperate with parents in putting an end to this state of matters, the board in 1908 established an educational information and employment bureau. In 1909 the Board of Trade set up in the city a labor exchange whose juvenile department was intended to perform related duties so far as the employment of young people is concerned. It was felt that in the interests of economy and effective industrial organization a scheme of cooperation was desirable. An arrangement was therefore arrived at between the Edinburgh School Board and the Board of Trade whereby the work of both departments is carried on jointly in the present office of the school board, and all persons above 14 and under 17 years of age are dealt with there. This arrangement is working with the utmost smoothness and to the satisfaction of all concerned.

The new organization combines the functions of the educational information and employment bureau and of the juvenile branch of the labor exchange. Briefly these are as follows:

(1) To supply information with regard to the qualifications most required in the various occupations of the city, the rates of wages, and the conditions of employment.

(2) To give information about the technical and commercial continuation classes having relation to particular trades and industries.

(3) To advise parents regarding the occupations for which their sons and daughters are most fitted when they leave school.

(4) To keep a record of vacancies intimated by employers and to arrange for suitable candidates having an opportunity of applying for such vacancies.

The educational information and employment department (entrance 14 Cornwall Street) is open daily, from 10 a. m. to 4 p. m. (Saturday, 10 a. m. to 12.30 p. m.), free of charge, to parents and pupils wishing information and advice as to education or employment.

To suit the convenience of parents who can not call during the day, the educational information and employment department will be open from 7 to 9 on the following evenings in February and March: Monday, February 24, and Monday, March 3.

You are cordially invited to make use of the services of the department.

(2) Continuation Classes.

Boys and girls who have gone through the work of the day school soon forget much that they have learned if they have no opportunity of extending the knowledge which they have already gained. The board would therefore impress on parents the importance of their children joining a continuation school *as soon as possible after leaving the day school.*

As you are probably aware, children can now leave school only at certain fixed dates. In Edinburgh these are March 1, May 1, September 1, and December 1. In February of this year over 1,000 pupils may terminate their day-school career.

The close of the day-school course is probably the most critical period in the life of children. There is grave danger of educational and moral waste if they are suddenly set entirely free from discipline and instruction. Between the ages of 14 and 18 careful supervision and training are essential to the formation of character, the creation of a sense of personal and civic duty, and the production of skilled and efficient workmen. It is of the highest importance then that all parents should realize that there must be no break between the day school and the continuation school.

In order that the passage from the day school to the continuation school may be as easy as possible, the board have made arrangements for a short summer session of 11 weeks' duration in 10 of the continuation schools. The session will extend from Monday, April 7, 1913, to Thursday, July 3, 1913. There will be a fortnight's holiday in April. The fee will be 2s. 6d. (Boroughmuir and Royal High Schools 5s.), returnable to all who make 80 per cent of the possible attendances. The board trust that you will do your utmost to see that any of your family who are now about to leave the day school enroll in one or other of the summer classes. (For particulars see inclosed handbill.)

Your attention is directed to the special provision which is now being made by the board for giving in the continuation classes practical instruction having reference to the various crafts and industries in the city. In connection with the new supplementary school at Tynecastle, a number of workshops have been erected, in which over 500 apprentices are being taught the principles of their respective trades. In these workshops there is equipment for the instruction of plumbers, tinsmiths, engineers, patternmakers, brassfinishers, molders, builders, joiners, cabinetmakers, tailors, tailoresses, upholsterers, French polishers, and plasterers. The board hope to be able to make provision of a similar nature in other parts of the city as opportunity occurs in connection with the building of new schools. For the benefit of apprentices in the south side of the city four temporary workshops have been opened in connection with St. Leonard's School for the practical instruction of tinsmiths, metal workers, tailors, upholsterers, and masons.

Details and advice regarding the courses of study most suited to prepare boys and girls for their prospective occupations may be had by parents or intending students on application to the director of the educational information and employment department at the school board offices. The head master of the day school will also be pleased to grant you an interview during the month of February regarding your child's future employment and education.

EDINBURGH SCHOOL BOARD.

EDUCATIONAL INFORMATION AND EMPLOYMENT DEPARTMENT.

Thoughts for a boy on choosing work.

1. Consider what you are best fitted for; ask your parents and your teacher what they think.
2. Think of the future. Many kinds of work done by boys, such as messengers, van or errand boys, end when a boy is 17 or 18, and then it is difficult for him to begin again. Many grown men are out of work who earned high wages when they were boys; but it was at work which led to nothing.
3. Learn a trade if you can get the chance. Think how good it is to know a trade at which you can get work in other parts of the country as well as where you live now.
4. Whilst you are a boy learn to work with your hands—that will make your brain strong. With clever hands and a strong brain you have a double chance in life.
5. Stick to your school till the last possible moment, and make good use of it. And "keep it up" by going to a continuation school when you leave the day school, or you will find, in a year or two, that you have forgotten much that you knew.
6. Remember that in the continuation schools you can receive instruction in courses of study directly related to the trade or business which you propose to learn, and that you can continue at a very moderate cost the advanced stages of these courses at the Heriot-Watt College or the College of Art.
7. If the work you take up does not suit you, or does not seem to lead to any hopeful future, stick to it till you get something really better. Do not wander from one work to another, but come back to your school and tell your teacher; he may be able to direct you to those who can advise you in choosing your next work more carefully. You will find nothing perfect; but a good fight and a hard one before you are 18 will make the rest of life more easy.
8. The educational information and employment department, 14 Cornwall Street, is open daily from 10 a. m. to 4 p. m. (Saturday, 10 a. m. to 12.30 p. m.), and on certain Monday evenings from 7 p. m. to 9 p. m. You can there obtain—free of charge—advice and information as to suitable employment and further education, and through the agency of the department you may obtain employment for which you are fitted.

Thoughts for a girl on leaving school.

1. Consider what you are best fitted for; ask your parents and your teacher what they think.
2. Choose healthy work; remember that domestic service offers food, home, and comfort as well as work and wages; that it is the training for the future home life of a woman; and that, with character and ability, it will command good wages in any part of the country.

3. If you prefer a trade, choose one in which you will be likely to find employment anywhere and at any time, learn it thoroughly so that employers will value your services. Do not change from one thing to another without good reason.
4. Stick to your school to the last possible moment, and make good use of it; later on you will see, better than you do now, how much the school work has helped. And "keep it up" by going to a continuation school when you leave the day school.
5. Remember that in the continuation schools you can receive instruction in subjects which are directly related to the various occupations open to girls and young women, and also the domestic training which will enable you to discharge with intelligent interest the responsible practical duties of the home.
6. If the work you take up is not satisfactory, stick to it till you get something really better. In any case come back to the school and tell your teacher how you are getting on.
7. Be brave and cheerful in whatever work you choose. You will find nothing perfect; but perseverance and hard work during the first few years will make the rest of life more easy.
8. The educational information and employment department, 14 Cornwall Street, is open daily from 10 a. m. to 4 p. m. (Saturday 10 a. m. to 12.30 p. m.), and on Monday evenings from 7 p. m. to 9 p. m. You can there obtain—free of charge—advice and information as to suitable employment and further education, and through the agency of the department you may obtain employment for which you are fitted.

In the summer of 1910, before the Edinburgh plan had gone very far, the school board undertook a census of the employments open to minors. The report is worth reprinting, as it shows the range of industrial opportunities in the city, and suggests the type of further schooling required for advancement in the skilled occupations:

Occupations in respect of which more than 500 young workers were found.

	Boys.	Girls.
Helps at home	1	856
Dressmakers, etc	...	649
Clerks and clerkesses	699	489
Messengers	931	361
Shop assistants	105	578
Between 200 and 500 workers.		
Domestic servants	2	207
Engineers and pattern makers	244	...
Factory workers	100	297
Printers	176	147
Compositors	83	131
Bookfolders, etc	2	240
Tailors and tailoresses	92	238
Van boys, etc	213	...
Butchers	214	...
Grocers	205	...
Between 100 and 200 workers.		
Bakers and confectioners	116	19
Hosiery knitters	6	108
Laundry workers	5	169

	Boys.	Girls.
Painters	124	...
Plumbers	113	...
Rubber workers	45	107
Stationers	54	63
Messengers, telegraph and G. P. O	150	1

Between 50 and 100 workers.

Hairdressers	58	...
Joiners	76	...
Laborers	68	...
Machinists	...	55
Railway servants	88	...
Tinsmiths	50	...
Tobacco workers	1	51
Warehouse attendants	45	40
Drapers	55	21
Typists	...	86
Chemists and druggists	54	23
Blacksmiths	50	...
Bookbinders	39	33
Bottle makers and workers	89	...
Brass workers and finishers	50	...
Dairy workers	13	82
Electricians	56	...
Paper rulers, stampers, envelope makers	11	77
Upholsterers	28	25
Waiters	30	21

The remaining occupations, all employing less than 50 young workers, are as follows.

Bag makers	...	38
Boot and shoe makers	27	...
Box makers	7	29
Brewery workers	26	...
Builders, bricklayers, masons, etc	21	...
Cabinetmakers	29	...
Cap makers	...	40
Case makers	6	17
Coach builders, painters, trimmers, etc	22	...
Coopers	46	...
Dental mechanics	21	6
Engravers	21	...
Gardeners	36	...
Glass makers, workers, and blowers	18	2
Iron workers and molders	28	...
Jewelers	24	1
Lithographers	28	9
Miners	31	...
Packers	7	28
Page boys	32	...
Photographers	12	15
Shirt makers and cutters	1	20
Watchmakers	23	1
Booksellers	37	1

	Boys.	Girls.
Fruiterers	9	34
Hawkers	28	8
Ironmongers	28	...
Dentists	24	...
Draftsmen	18	...

All the Edinburgh schools have received copies of the occupational census, besides a series of booklets for boys and for girls. The girls' handbook, entitled "Occupations for girls," is similar to that used in Glasgow. A copy is sent to each girl approaching the leaving age. The boys' booklets thus far issued are: "How to become an engineer," "How to become a printer," and "How to enter the civil service." In the 20 or more pages of these booklets the following points are covered:

1. List of industries, trades, and professions of the town or district, with names of chief employers.
2. Local demands for young workers in the various trades and industries.
3. Qualifications most required in the various occupations.
4. Conditions of apprenticeship for each trade, etc.
5. Beginner's weekly wage.
6. Minimum and maximum rates of remuneration.
7. Possibilities of promotion, etc.
8. Statements regarding further educational courses and the requirements of employers.

Follow-up work, as it is known in Birmingham and London, does not exist in Edinburgh, but the interest of the advisory council in its work is as great as that of any committee. The function of this council is that of advising the board as to matters connected with the training required for the occupations open to Edinburgh boys and girls, the conditions of employment, and general matters of school efficiency. There are sectional committees of the council composed of employers and workers, with an educator or other specially qualified persons added.

The following is a list of the sectional committees:

1. Printing.
2. Engineering.
3. Brass finishers' work (Tynecastle).
4. Tinsmiths' work (Tynecastle).
5. Tinsmiths' work (St. Leonard's).
6. Molders' work.
7. Building construction.
8. Plumbers' work.
9. Plasterers' work.
10. Carpentry and joinery.
11. Cabinetmaking.
12. Upholstery.
13. French polishing.
14. Baking and confectionery.
15. Tailors' work.
16. Hairdressers' work.
17. Art.
18. English.
19. Commercial subjects.
20. Domestic subjects.
21. Trade dressmaking.
22. Physical exercises.

There are members on these sectional committees who have been exceptionally active in the work. The visits of these committees to the continuation classes have resulted in excellent suggestions, while an important by-product has been to educate public opinion to a remarkable degree in favor of the city's vocational enterprises. It may be fairly questioned, however, if there has not been overorganization, and a rather unwieldy advisory agency established. Without a much greater office force it is impossible to vitalize so extensive a committee system. Nevertheless, the reports of some of these sectional committees show good work done, and selections are here given from a few:

Report by engineering sectional committee.

Mathematics and drawing.

There seems to be a general feeling amongst the teachers that the scheme of instruction in engineering drawing and mathematics might be improved. For example, in drawing, simple machine details are mentioned in the first-year syllabus, but bolts, nuts, and similar details are deferred until the second year. The geometrical drawing of the first year might be more closely related to engineering drawing, and a little solid geometry might be included in the second year engineering drawing.

The syllabus for mathematics is rather vague as to the amount of work to be covered, and no mention is made of graphs in the second year.

Workshop practice.

The first-year's syllabus is intended evidently for boys who have not yet started, or are just beginning, their apprenticeship, and for such it should be useful, as it will make them familiar with the ordinary engineering tools. The second year's work, however, might be of a more advanced character, as it must be remembered that if a boy is in an engineering workshop his training there continues during the summer six months.

A greater interest might be taken in workshop practice if students had a more definite object in their work, such as the making of parts suitable as drawing models. Thus it was noticed in some of the schools that examples of lewis and rag bolts supplied to the drawing classes were not of the usual pattern, and even the making of simple parts of this kind would be beneficial to young students if forged, machined, and well finished exactly to sizes given on a fully dimensioned drawing, perhaps previously made by the same student. The necessity of having the holes in the plates of a riveted joint absolutely fair and free from ragged edges might be brought home to students by purposely putting the holes out of line and then sawing through the joint after riveting to show the distortion of the rivet.

More advanced work might be given, such as the making of simple plummer blocks—say for a 2-inch shaft—right-angled stop valves, 1-inch to 2-inch bore; but the time which any student can spend at a turning lathe is very limited, and each piece of work should be such that it can be made completely in a session by a small group of not more than three students.

High-class tools likely to be of subsequent use to students might also be made in the workshop. Thus a built-up steel square provides excellent practice in filing, scraping, and riveting.

Polished steel bars of suitable sizes can be obtained now for very little more than the cost of raw material, and thus the student could acquire a valuable tool for a few pence.

The time available for this work is about 25 nights of 2 hours each session. In order that a class of 25 students, working in groups of two when at the lathe or forge, should have 13 nights at fitting, 10 nights at turning, and 2 nights at forge-work, 5 lathes would be required. There are at present 4 lathes, but 2 of them have not slide rests, and are only suitable for hand turning. As there are generally more than 25 students in the workshop, the time which each individual student gets at turning just now is probably not much more than 2 hours each session. More lathes are therefore required.

The question of workshop instruction for young journeymen or boys well on in their apprenticeship who are mentally unable, or who have no ambition, to become anything but artisans, is one which in the first place might be referred to the Heriot-Watt College. It is evident that a different course of instruction is necessary for such students, and an attempt might be made to obviate the effects of specialization in their daily work.

For ambitious boys, on the other hand, mathematics and drawing are more important than workshop practice as a preparation for the theoretical classes of the Heriot-Watt College, and workshop practice, therefore, should be optional in order that such boys may have the same amount of time at drawing in all schools.

Since the above notes were written, the committee have learned that additional engineering workshops will be erected during the summer months.

Report by molders' work sectional committee.

The committee met at Tynecastle School and visited both the molding shop and the pattern shop and found an intelligent interest being taken in the work by a large number of boys.

The molding shop is not yet equipped with a furnace, consequently the instruction in molding is still, from a practical point of view, almost useless. The committee understand that it has been decided to erect a cupola as suggested by them.

One point that greatly commended itself to the committee was the way the pattern-making and the molding classes interchanged, the committee being of opinion that this was the best means of making both trades understand common difficulties.

Report by tinsmiths' sectional committee (Tynecastle).

There is one recommendation we should like to make, viz, that the hours be altered. As most of the boys are free at 5 o'clock at night, and require to be at work by 6 o'clock in the morning, they ought to be in bed at 10 o'clock if health is to be considered. Therefore we recommend that the closing hour should not be later than 9.15 p. m.

Report by plumbers' work sectional committee.

The committee visited Leith Walk, Tynecastle, and South Bridge classes. They were pleased to note the interest which the students took in their work, and also the good attendance at both theoretical and practical classes. The committee desire to make the following recommendation: That at the practical classes the students be allowed to work with larger sizes of pipes—say 4 inches—for bending work.

Report by carpentry and joinery sectional committee.

This committee have paid one visit to each of the classes in South Bridge, Stockbridge, Bruntsfield, and Tynecastle schools. We desire to express our appreciation of the efforts made by the board to give effect to some of the suggestions made in previous reports, and venture to hope that the others may not be lost sight of, especially those contained in the three concluding paragraphs of last year's report.

The increasing interest of the lads attending these classes points to the conclusion that in the near future the board will be faced with the necessity of still further increasing the accommodation for them. Generally, we are of opinion that the progress of the pupils is commensurate with the conditions and possibilities of the instruction given, but we are also of opinion that the results might be greatly improved by the introduction—

(1) Of some method of grading the pupils.

(2) Of some more uniform method of imparting the necessary instruction.

(3) Of affording opportunities, to the higher grades, of displaying and developing originality of design and construction.

The necessity for giving effect to the first of these will be evident if we state that an elementary teacher who was called upon to teach in the same room, and at the same time, classes with three, four, five, and six pupils, would be exactly in the same position under that arrangement as the teachers of the carpentry and joinery classes to-day.

In regard to the second, if a more uniform system of teaching, based probably on an approved textbook embodying Scottish as well as English methods and names, were adopted, comparison between the different classes would be much easier, and the possibility of introducing examinations in practical work would be at once established.

In regard to the third recommendation, the committee early in the session were impressed with the necessity of encouraging some originality in design and construction in the higher grades, and toward that end suggested to the board that in each of the classes two or more of the more advanced lads should be asked to design and execute to sizes given some piece of work, for permanent use in some of the schools presently under construction for the board. It is thought that if this were done the interest of the lads in their work would be stimulated, and a healthy emulation among the schools set up. This could only be taken in hand, of course, at the beginning of a session.

In regard to the question of examinations in practical work, this committee are of opinion—

(1) That an examination in practical work for each trade should be held at or near the close of each session.

(2) That this to be effective must be preceded by a system of grading of pupils, and the introduction of a more uniform system of teaching in the various classes.

(3) That the tests should be the same for each parallel grade in all the classes.

(4) That these tests should be set by the class teachers in each trade, collectively, and in consultation with the sectional committee.

(5) That each sectional committee, with or without expert assistance, should judge and classify results.

(6) That all the boys taking part in these examinations should have the examination day off work, the examination to be held during the day in preference to in the evening.

Report by upholstery sectional committee.

The committee, having on various occasions visited the workshops at Stockbridge and Tynecastle, desire to express their satisfaction with the work done by the classes, the pupils being most attentive, and the progress satisfactory.

Both teachers are most enthusiastic, and do their utmost to make the work interesting and instructive.

Some of the frames used for upholstery were quite unsatisfactory, and the committee think that wherever possible, all frames and other materials should be submitted, before being purchased, to the inspection of one or more members of the advisory council. It is quite impossible for boys, or men either, to do good work on bad frames.

In consequence of the different stages at which the boys are, it is difficult when classes are large for teachers to give the practical supervision which is necessary to each individual member. We would therefore suggest that whenever the class exceeds 10 boys an assistant teacher be provided.

Report by baking and confectionery sectional committee.

The committee beg to report that during the session they have visited the classes presently conducted at the Fountainbridge Center, and have been present at the lectures and practical lessons. It is a matter of sincere regret to find that the number of pupils on the roll, and hence in attendance, shows a falling off as compared with previous years. Probably the solution is due, and may be traced, to the new regulations now in force and more still to the want of a properly equipped bakery workshop, such as is provided for and is now enjoyed by nearly all other branches of industry, notably a kindred one—cookery. Bakery and confectionery are not of less importance to the general community. It is our duty to direct attention to this fact, to remind the board of the recommendation approved last year, whereby they agreed to erect a bakery and class rooms, laboratory, etc., at Fountainbridge, and again to express the hope that this will soon be given effect to. Mr. Norman Robinson, Greenock, has proved himself a most capable and highly efficient lecturer, and has thus fully justified all expectations. The teachers, baking and confectionery, in their respective departments, continue to carry on their work in an efficient manner.

The committee are in favor of holding examinations both in written and practical work.

Further, they are of opinion that in the erection and equipment of the bakery, and in the selection of suitable ovens and other necessaries, they having practical experience and skill in these matters, might be consulted. The practical knowledge of the committee should prove both helpful and useful to the board or the committee dealing with the question.

Report by Trade Dressmaking Sectional Committee.

The members of the sectional committee have during the session visited Boroughmuir, Bruntsfield, Tynecastle, and Sciennes evening schools. Bruntsfield School is the only school in which at present there is a class which might come under the description of a trade dressmaking class, viz, a trade blouse-making class.

The committee carefully examined the work done by the blouse-making class and the system of teaching, and were well satisfied; but blouse making is a very small part of trade dressmaking, and the committee think that the other branches of the business ought to be included in the syllabus.

The members of the committee on their visit took the opportunity of inspecting the work of certain other classes to some extent allied to trade dressmaking, particularly domestic dressmaking and trade tailoring. The system of teaching domestic dressmaking did not appeal to the committtee as being suitable for the trade class, but they considered that the method of conducting the trade tailoring classes makes these of much benefit both to the pupils and to the trade, and they are of opinion that trade dressmaking classes should be conducted on similar lines.

The committee would therefore respectfully recommend that the classes for trade dressmaking should be in three sections—(1) bodice making, (2) skirt making, and (3) sleeve making. Pupils engaged in business as bodice makers would take the courses in skirt making and sleeve making, and pupils whose business is skirt making or sleeve making would take bodice making and sleeve making, or bodice making and skirt making, as the case may be. In this way, assuming that the pupils had all an experience during the day in one or other of the branches of the business, they would only require to attend two sessions to acquire a knowledge of the other branches, but the committee think that in addition to what may be called the elementary classes there ought also to be an advanced class, which a pupil would take during a third session, and which would include all three branches in their practical application. A pupil in the third session ought to be qualified to make a complete afternoon or evening dress, should at the same time be able to acquire a general knqwledge of practical fitting, and should be able to pass on to a class such as is conducted in Gilmore Place School in dress design.

The committee would further like to suggest that the teachers chosen for each section of the trade should be qualified assistants, with experience of the special branches, in the business houses in the city. The committee would be glad to be of assistance to the board in the selection of suitable tachers.

Report by the Commercial Subjects Sectional Committee.

The commercial subjects sectional committee have this year visited the three commercial institutes—Sciennes, where only first year's work of the commercial curriculum is carried on, Boroughmuir, and the Royal High School.

The committee in their report last year expressed their dissatisfaction with the present scheme of coordination between Sciennes and Boroughmuir commercial insitutes. By this scheme pupils take the first year of their subject in Sciennes, and are then required to proceed to Boroughmuir for their second and succeeding years. This simply paves the way for what is a very serious and grave matter in connection with continuation class education, viz, the enormous leakage of pupils that is yearly taking place after one year's attendance at the classes. From an economic point of view it means considerable waste of money and energy when something like 50 per cent of students qualifying in the first year of the subject do not return. Out of the 200 pupils enrolled in Sciennes last year in the commercial course, 126 could not be traced as having returned for the second year of their course.

For this very serious state of affairs a remedy must be found. Perhaps one way would be to grant certificates to those students only who had completed the full course of two or three years; or to repay the fees only to such as complete that course. In any case something ought to be done to minimize this evil and waste.

The committee notice, with gratification, that the number of students taking commercial English is on the increase, as this subject, along with arithmetic, must at all times be the basis of a good sound commercial education.

The committee again this year, as last, found that unfortunately it is still necessary to devote a considerable amount of valuable time in the commercial English classes to spelling. How this weakness arises is difficult to understand, as students can not be admitted to a first year of the commercial course unless they are in possession of the merit certificate, or a certificate of attendance at a higher grade school, and one has every right to expect better things from pupils possessing either of these qualifications—requiring in the one case a primary school education extending to 7 or 8 years, and, in the other, a primary and intermediate education extending to 9 or 10 years.

The committee would like to see arithmetic taught to the students in a more interesting way. At present it is treated too much as a subject by itself, rather than as a subject correlated to the daily requirements of the students. If it were made more practical, greater interest would be taken in its study by the pupils.

The committee notice that the Scottish phonographic association have acquiesced in their last year's suggestion to base the examination in shorthand at 60 words a minute on purely business matter. No doubt this action will prove a more satisfactory test to the students, who are chiefly engaged in commercial work.

The committee would again urge the necessity of the school board being the authority for junior commercial education, and taking powers to grant the junior commercial certificate, without the one year's attendance at the Heriot-Watt College. This certificate would also include the subjects of typewriting and shorthand. At present there is no certificate for typewriting. A special examining body coopted from the various commercial societies established in the city might be the examining body for the granting of this certificate.

If such a certificate could be granted by the school board it would mean that more enthusiasm and zeal would be evinced by the students, not only to finish the junior course in the commercial institutes, but to proceed to the Heriot-Watt College with a view to earn the senior commercial certificate. With this double qualification in their possession, there is no doubt that the successful students would be better equipped for securing good appointments in commerce.

The main effort of the advisory council is directed toward the promotion of attendance at the continuation classes and at other institutions in which Edinburgh is fortunate. The aggressive policy followed for the past two years with reference to the evening instruction of all working minors has resulted in the enrollment of a large number of young people. Aided by the law of 1908, section 10 of which permits the framing of rules for compulsory attendance at evening school, it is quite likely that Edinburgh will in time enroll all working minors in evening classes, just as Glasgow is attempting to do. When this stage is reached it is to be hoped that the energy and public interest thus far manifested in this city for the evening instruction of working children will be devoted to the raising of the school age and to the daylight rather than the evening instruction of at least those children between 14 and 16. The present arrangements take more out of the growing children than the community should be willing to permit. No 14 or 15 year old boy can be safely confined to about 10 hours of office, factory, or other work and for 2 hours or more at mental labor in a classroom.

The importance of this matter has been recognized in Edinburgh with reference to the teaching staff. The severe strain on continuation school teachers who have other work to do throughout the day has led the school board to decide that the head teachers of the largest schools shall be relieved half time from day-school work on such days as they are engaged in the evening school. Some such safeguard might well be applied to the growing adolescent in wage earning at this period of peculiar moral and physical strain.

The relation of the continuation classes to the guidance and placement work in Edinburgh is so close that some of the circulars dealing with the continuation classes are here given.

EDINBURGH SCHOOL BOARD.

EVENING CONTINUATION CLASSES.

DEAR SIR OR MADAM: By the Education (Scotland) Act of 1908 there has been laid upon school boards a definite responsibility for the further education of adolescents. It is now the duty of a school board to make suitable provision in continuation classes for the instruction of young persons above the age of 14 years with reference to the crafts and industries practiced in the district. Power has also been given to school boards to require the attendance at such classes of all young persons between the ages of 14 and 17. The development of a system of continuation-class instruction adapted to the needs of young people, to the convenience of employers, and to the requirements of local trades and industries is now engaging the attention of educational authorities throughout the country.

During the last five years there has gradually been established in Edinburgh between employers and the school board a system of cooperation which has enormously increased the attendance at the continuation schools, and which has enabled the board to organize more completely the systematic and scientific training required by those who have entered upon an occupation.

Your special attention is drawn to the following figures, which are conclusive testimony to the success which has attended the system of cooperation set up between the school board and the employers of the city in 1906 and extended during the following years:

Sessions.	Enrollment.	Increase.	Per cent of increase.
1905-6	3,722	228	....
1906-7	4,516	794	21.3
1907-8	6,477	1,961	43.4
1908-9	7,621	1,144	17.6
1909-10	8,789	1,168	15.3
1910-11	10,099	1,310	14.9
1911-12	10,755	656	6.4

During the last six years the enrollment has increased by 189 per cent. It is gratifying to learn that the methods by which this success has been achieved have commended themselves to the highest educational authority, and that other parts of the country are now adopting the same policy modified to suit their particular circumstances.

There are still, however, in Edinburgh almost 6,000 young persons between the ages of 14 and 17 who are receiving no instruction either in subjects of general education or in the technical principles of their daily occupation.

In their annual reports on the work of continuation classes the Scotch Education Department refer in the following terms to the progress made in Edinburgh, viz:

> Good organization, the cooperation of the education authority with employers, and a public opinion increasingly alive to the importance and necessity of the work have combined to secure a very rapid development of the continuation-class system in Edinburgh. The Edinburgh school board maintains a position in the front rank of enlightened educational authorities by the unstinted exertion and enterprise with which it has grappled with the very difficult problem of continued education.

Without the whole-hearted cooperation of the employers in the city the achievements of the past six years would have been impossible. The board desire to express their appreciation of the important part which employers have taken in increasing the enrollment and improving the efficiency of the classes, and to appeal to them for a continuance of their valuable assistance.

Among the ways in which employers can assist the board at this time the following two may be mentioned:

1. *Guarantee of fees of employees.*—Last year 124 employers became surety for the fees of their young workers. A summary of the attendance and progress of those students show that the guarantee system is attended with great success, and that the guarantor incurs little or no financial loss. In the event of your deciding to adopt the system, kindly fill up and send the inclosed form to Mr. John Stewart, deputy clerk to the Edinburgh School Board, Castle Terrace. At the end of the session you will be asked to pay the fees only of those who fail to make 80 per cent of the possible number of attendances, and of those who, being over 20 years of age, enroll in one of the centers for adults (Broughton H. G., Gilmore Place, and Warrender Park Schools).

2. *Meetings of work people.*—In September, 1911, 125 such meetings were held, with the result that interest in the continuation classes was greatly stimulated. It will be a great favor if you grant permission for a member of the board to address your employees.

In conclusion, the special attention of employers is directed to the efforts of the board to provide proper facilities for elementary trade instruction. During last winter session over 400 apprentices received a certain amount of practical training in the 18 workshops which have been erected at Tynecastle. It is the intention of the board to build in other districts such workshops as appear to be required for the instruction of young persons engaged in the local industries.

The winter session of the classes begins on Monday, September 23, but students should enroll on Thursday, September 19, or on Friday, September 20.

EDUCATIONAL INFORMATION AND EMPLOYMENT DEPARTMENT.

The bureau established by the board in September, 1909, has been largely made use of by the employers in the city. Since its opening vacancies have been intimated to the bureau by 2,826 individual employers, and 4,565 boys and girls have been enabled to enter upon occupations for which they appear fitted.

No fee is charged for utilizing the services of the bureau.

To Employers in Edinburgh.

Edinburgh School Board.

CONTINUATION CLASSES.

Dear Sir: The school board desire to thank the various trades-unions of the city for the keen interest which they have shown in the work of the continuation classes and of the educational information and employment department, and to again ask their cooperation and assistance in the fuller development of these two agencies.

By the Education (Scotland) Act of 1908 there has been laid upon school boards the duty of making suitable provision in continuation classes for the further instruction of young persons above the age of 14 years with reference to the crafts and industries practiced in the district. Power has also been given to school boards to require the attendance at such classes of all young persons between the ages of 14 and 17 years.

During the last six years the Edinburgh school board have been endeavoring, with the assistance of employers and workers, to develop a system of continuation class instruction adapted to the requirements of the trades and industries of the city. They are pleased to be able to announce that arrangements have been made for carrying on the following trade and technical courses during the coming winter session, viz:

1. Engineering.
2. Physics.
3. Brass finishers' work.
4. Tinsmiths' work.
5. Molders' work.
6. Mining.
7. Building.
8. Carpentry and joinery.
9. Plumbers' work.
10. Gas lighting and appliances.
11. Plaster work.
12. Cabinetmaking.
13. Upholstery.
14. French polishing.
15. Course for compositors and printers.
16. Printing machinemen's course.
17. Bookbinding.
18. Breadbaking.
19. Confectionery.
20. Flour-millers' work.
21. Tailors' work.
22. Tailoresses' work.
23. Hairdressers' work.
24. Agricultural science.

The special attention of the members of the various trade societies is directed to the fully equipped workshops at Tynecastle, where practical instruction is given by qualified workmen commanding the confidence of the trades concerned to apprentice engineers, brassfinishers, tinsmiths, molders, carpenters, cabinetmakers, upholsterers, French polishers, builders, plumbers, plasterers, tailors, and tailoresses. The board hope to have ready within a year or so, in the northern and southern districts of the city, such workshop facilities as appear to be required for the instruction of apprentices in the local industries.

The organization of general knowledge courses for those who intend to enter certain professions or the civil service, but who are not in a position to pay the fees for private classes, will no doubt be of much interest to your members.

Though the enrollment in the continuation classes has risen from 3,494 in 1905 to 10,755 in 1912, there are still in Edinburgh almost 6,000 young persons between the ages of 14 and 17 years who are not in attendance at either day or evening classes. It is now the endeavor of the school board to bring as many as possible of these within the influence of the continuation classes, and the board feel that the secretaries of the various trades-unions can lend most valuable help in making the classes known, and in encouraging the lads and girls, the young men and young women connected with their societies, to attend one or other of the schools for the purpose of completing their general education, or of specializing in that course of study which bears directly upon the occupation in which they are engaged.

Full information regarding the classes can be had from the prospectus, copies of which may be obtained free of charge from the janitors of the various day schools, or at the school board offices, Castle Terrace. Parents or intending students requiring advice or guidance in regard to the choice of a course of study should consult the organizer of the classes—Mr. David M'Nally—who will be in attendance at the Educational Information and Employment Bureau, Cornwall Street, on the evenings of Monday, September 9, and Tuesday, September 17.

Special attention is directed to the fact that the fee of 5s. (Milton House, North Canongate, and Towerbank 2s. 6d.) for the session is returned to students making 80 per cent of the possible attendances, except in the case of those over 20 years attending the three special centers for adults—Broughton H. G., Gilmore Place, and Warrender Park Schools.

The schools reopen on Monday, September 23, and pupils can be enrolled then, or on the evenings of Thursday and Friday, September 19 and 20, from 8 to 9.30 o'clock.

We shall be favored by your bringing this circular and the inclosed prospectus before the first meeting of your society. We are sure the members are fully convinced of the necessity for proper supervision and guidance of young persons between the ages of 14 and 17. All will agree that these are the years when much may be done toward the formation of right habits of life and a true sense of the duty of the individual to himself, to his fellow-workmen, to his employer, to his city, and to his country.

To SECRETARIES OF TRADES-UNIONS IN EDINBURGH.

EDINBURGH SCHOOL BOARD.

CONTINUATION CLASSES.

REVEREND SIR: On behalf of the Edinburgh school board we desire to thank you for the interest which you have displayed in former years in the evening continuation schools. We shall be much pleased if you can continue to give your assistance in making these classes known.

It will be a great favor if, from your pulpit on Sundays, the 15th and 22d instant, you will intimate that the evening schools for young men and young women will reopen on Monday, the 23d instant, and at the same time urge the young people of your congregation to take advantage of these opportunities for improvement.

It has been pointed out by the Scotch education department that school boards in industrial districts have no more important or pressing task before them than the fostering by all means in their power of a movement for the better use of the years of adolescence as a preparation for adult life. To accomplish this great end school boards must join hands with every agency having for its object the industrial efficiency and social well-being of the community. The Edinburgh school board therefore appeal with confidence to the clergymen of the city to aid them in their efforts to stop the educational and moral waste consequent upon neglect to use properly the all-important years between the ages of 14 and 18. Careful supervision and training during these years are required for the formation of character and for the creation of a sense of personal and civic duty.

In the continuation schools much may be done to fit our young men and women for their duties as citizens and for their occupations in life, and generally to counteract the evil influences so prevalent in crowded cities.

You are probably aware that it is now the duty of a school board to make suitable provision in continuation classes for the further instruction of young persons above the age of 14 with reference to the crafts and industries practiced in the district. The Edinburgh school board have now made arrangements for giving instruction bearing upon nearly all the local trades and industries. Eighteen workshops have been erected at Tynecastle for the practical training of apprentices in the western districts, and the board hope to have within a year similar facilities in the north and south of the city.

Though the enrollment at the continuation classes has risen during the last seven years from 3,494 to 10,755, there are still in Edinburgh almost 6,000 young persons between the ages of 14 and 17 who are receiving no systematic training. The board are now endeavoring to reach these, and they make an earnest appeal for your assistance.

Inclosed is a general handbill and a copy of the prospectus, from which you will see that, in addition to the ordinary classes for young men and young women, special classes are to be held at Broughton H. G. School, Gilmore Place School, and Warrender Park School for adults over 20 years of age.

Thanking you in anticipation for your kind help in this matter.

To All Clergymen in Edinburgh.

The directors' statement regarding the work of the educational information and employment bureau to March, 1913, is as follows:

Edinburgh School Board.

Director's statement regarding the work of the Educational Information and Employment Bureau.

	For 4 weeks ending Mar. 14, 1913.	Total since Sept. 1, 1912.	Total since opening, Sept. 6, 1909.
Number of pupils reported as leaving school at or since summer holidays 1909, and concerning whom bureau cards have been received	683	1,353	12,435
Number of above who have stated their intention to enroll in continuation classes	438	891	7,724
Number of above 12,435 who have made personal application to the bureau for employment	185	1,321	6,712
Number of above 6,712 who have entered on an occupation	202	1,352	6,075

Kinds of employment above 6,075 are engaged in.

Apprenticed.	For 4 weeks ending Mar. 14, 1913.	Total since Sept. 6, 1909.
Printing and allied trades	18	699
Engineers	15	318
Domestic servants	14	311
Dressmakers	7	233
Tailoresses	10	113
Plumbers	5	81
Tailors	3	74
Stationers		71
Joiners	2	67
Brass finishers	1	62
Grocers		53
Tinsmiths	2	52
Draughtsmen		51
Painters	2	51
Bakers and confectioners	2	49
Electricians		47
Butchers	1	45
Drapers and clothiers		41
Milliners	1	41
Blacksmiths	1	38
Upholsterers	1	38
Laundresses	3	37
Instrument makers	1	35
Chemists		31
Booksellers	1	29
Photographers		28
Ironmongers		26
Cabinetmakers		26
Watchmakers and jewelers	2	26
Gunsmiths		18
Masons	1	17
Boxmakers	7	13
Gardeners		12
Wireworkers		12
Boot manufacturers		11
Coopers		10
Architects	1	10
Coach builders		9
Engravers		9
Page boys	6	7
Furriers		6
Shirtmakers		6
Leather merchants		6
Fishing-tackle makers	1	6
Glass blowers		5
Embroiderers		5
Saddlers		5
Hosiery makers		5
Plasters		5
Gilders and picture framers		5
Machinists		4
Surveyors		4
Art designers		4
Piano tuners		3
Iron molders		2
Pattern makers		2
Portmanteau makers		2
Organ builders		2
Barbers and hairdressers		2
Glass cutters	1	2
Mantle makers		1
Typewriter mechanics		1
French polisher	1	1
	110	2,985
Office work:		
General business houses	10	913
Legal offices	7	85
Insurance offices		4
Public or municipal offices		4
Railway service		3
Banks		
	17	1,009
Girl probationers	7	7
Telephone operators	2	2
Telegraph messengers	17	92
Shop assistants	7	423
Miscellaneous	9	611
Temporary work	33	946
Number of employers intimating vacancies	139	3,765
Number of vacancies intimated	184	4,269
Applications for advice regarding education and employment (about)	192	8,100

Employment and vacancies.

	For 4 weeks ending Mar. 14, 1913.	Total since Sept. 1, 1912.	Total since opening, Sept. 6, 1909.
Apprenticed	110	605	2,985
Office work	17	176	1,009
Girl probationers	7	7	7
Telephone operators	2	2	2
Telegraph messengers	17	63	92
Shop assistants	7	106	423
Miscellaneous	9	158	611
Temporary work	33	206	946
Number of employers intimating vacancies	139	777	3,765
Number of vacancies intimated	184	951	4,269
Number of applications for advice regarding education and employment (about)	192	1,135	8,100

In concluding this account of the Edinburgh plan, it may be of interest to reproduce the regulations and suggestions pertaining to the working of the educational information and employment department:

REGULATIONS AND SUGGESTIONS AS TO WORKING OF THE EDUCATIONAL INFORMATION AND EMPLOYMENT DEPARTMENT.

1. Duties of director.

1. To interview and advise boys and girls, and their parents or guardians if possible, with regard to (*a*) the occupations for which the boys and girls are suited by ability, taste, character, and education; (*b*) the further educational courses which bear directly on these occupations; and (*c*) the opportunities which exist in the various occupations.

2. To prepare leaflets and pamphlets or tabulated matter giving information to the scholars about continuation work.

3. To keep a record of all pupils who leave school; their educational attainments, the employment they enter upon, and their progress at continuation classes.

4. To send reports to employers when desired as to the progress and attendance of the employees at classes.

5. To organize such supervision, as is approved by the board, of boys and girls after they have obtained employment both in regard to attendance at continuation classes and progress in their industrial career.

6. To act as organizer of the continuation classes, and to keep the system of further education in real touch with the industrial needs of the locality.

7. To report periodically on the work of the department.

2. Duties of headmasters.

1. To see that the registration cards for pupils leaving school are duly filled up and forwarded to the director.

2. To furnish such additional information regarding leaving pupils as may be required.

3. To cooperate with the board in their special efforts to guide boys and girls into the continuation classes as soon as possible after the termination of their day-school career.

4. To arrange meetings of leaving pupils and their parents to be addressed by the visiting members of the board in the month of November, or at such other times as is found more convenient.

5. To address collectively before the summer holidays the senior pupils on the question of choice of suitable occupation and early enrollment in continuation classes.

6. To grant to the parents of leaving pupils an interview to discuss the future of their children.

7. To give to pupils in their last year at every suitable opportunity advice regarding suitable employment and education.

3. Duties of parents and pupils.

1. To give all information required for filling up the registration cards.

2. To make application to the headmaster or director for information and guidance.

3. Parents to see that their children stay at school until suitable employment has been obtained.

4. To intimate to the director particulars as to employment when it has been found.

5. Parents to see that their children pass on to continuation classes immediately on leaving the day school, and remain in attendance until they are eighteen years of age at least.

4. *Suggested action by employers.*

1. To notify all vacancies for learners or apprentices, wherever possible, some time in advance.
2. To furnish details as to the rates of wages and conditions of employment in their respective trades, professions, or callings.
3. To apply for information regarding applicants for employment.
4. To encourage attendance of employees at continuation classes by one or more of the following methods, viz:
    - (*a*) Guarantee of fees.
    - (*b*) Special rewards.
    - (*c*) Exemption from overtime.
    - (*d*) Payment of extra wages to those who reach a given standard of attainment.
    - (*e*) Opportunities for promotion to specially qualified pupils.
    - (*f*) Facilities to attend classes during work hours.
    - (*g*) Direct personal interest shown by periodic visits to the continuation schools.
    - (*h*) Arranging meeting of workers to be addressed by a member of the board and the organizer of continuation classes.
5. To offer suggestions as to the equipment and schemes of work for trade and technical classes.

VIII. MEDICAL INSPECTION AT THE START IN LIFE.

Every part of the United Kingdom has its certifying factory surgeons, so called, appointed by the chief inspector of factories. There are altogether 2,000 of these officers who are frequently also medical officers of health, and, most unfortunately, are paid for the examination of children by fees from the employers. The duties of the factory surgeons, under the Factory and Workshops Act of 1901 and 1907, and the order of the Secretary of State, are:

(*a*) To examine every child or young person under the age of 16 within 7 days (or 13 days in the rare cases where the surgeon's residence is more than 3 miles from the place of work) of his commencement of work in a factory or in any workshop where one or more of the following processes are carried on: File cutting, carriage building, rope and twine making; brick and tile making; making of iron and steel cables, chains, anchors, grapnels, and cart gear; making of nails, screws, rivets; baking bread, biscuits, or confectionery; fruit preserving; making, altering, ornamenting, finishing, or repairing wearing apparel by the aid of the treadle sewing machines.

(*b*) To make certain examinations and inquiries in connection with accidents, workmen's compensation cases and dangerous trades.

It should be noted that, under the Factory and Workshops Act, a worker under the age of 16 must be reexamined each time he changes his place of employment. "Half-timers," that most pitiful class of spent children, must also be reexamined when they commence employment as "full-timers." Something like 500,000 examinations are made annually. In 1910 nearly 8,500 children were rejected as being physically unfit for employment. In about 6,000 cases the surgeons exercised their powers with more or less care under the Factory and Workshops Act (1901) to grant "conditional certificates,"

e. g., pass the child for employment subject to exclusion from certain processes entailing danger. In 1911 the number of young persons rejected from employment amounted to 10,000. Some juvenile advisory committees have undertaken to follow up cases of boys and girls rejected by the certifying surgeons and to find them suitable employment if any employment is desirable. There is very great need of coordinating the activities of factory surgeons, medical officers, and the advisory committees. No one more keenly appreciates the present unsatisfactory situation than does Sir George Newman, the chief medical officer of the board of education. In the United Kingdom, as in the United States, there has been little intelligent effort to correlate the work of employment health inspection with the social needs of the children.

Cooperation is essential from every viewpoint. There is nothing to prevent the child rejected at the factory gate by the factory surgeon from obtaining employment in an occupation outside the factory act and removed from any legal scrutiny, employment often infinitely more harmful physically than that from which he has been rejected. Because the home and the school figure so little in the present methods of medical factory inspection, the rejected child is frequently unable to explain to the parent the physician's reason for rejection. The factory act stipulates that a written explanation of the reason for rejection shall be given, but this provision is a dead letter. An exceptional illustration of the cooperation here suggested may be found in the efficient work of the medical officer (school) for Dewsbury. In this instance there is the fortunate fact that the medical officer is also the certifying factory surgeon, a situation which gives him the opportunity to see the child in school before employment, and in the places of employment at the time of being engaged.

This physician has made it his business, wholly on his own initiative, to notify the Dewsbury advisory committee for juvenile employment, of the rejections made which needed the attention of the committee. The committee's secretary or some member visits the parent until the children obtain suitable employment or medical treatment. In addition to giving information of rejected cases, another group of children are also reported to the advisory committee. A certifying factory surgeon meets with certain children who may have some defect which careful treatment can remedy and thus prevent later and more serious obstacles to passing a medical inspection.

The following table shows the cases of all kinds reported by the Dewsbury certifying factory surgeon to the advisory committee and dealt with during the year 1911 to April, 1912:

Cases notified as rejected from employment	52
Cases where conditions have improved and the children are now in suitable employment	19

Cases where children have received medical treatment and are now in suitable employment	31
Cases of children unfit for employment	2
Cases of delicate children in employment notified	24
Total number of cases rejected and delicate visited and reported on	76

The following is an interesting table of cases in connection with the Dewsbury work, interesting because of the comments recorded on the conditional certificates:

Year.	Reason.	Work allowed.	Work forbidden.
1908	1. Lateral curvature of spine	Attend loom	Not to lift heavy baskets, etc.
	2. Defective vision	Folding blankets	Machine work.
1909	1. Defective vision, lateral nystagmus (congenital)	Simple handwork, and general errand work in patent-glazing factory.	Work with machinery.
1910	1. Mentally somewhat dull	Paper-box making by hand.	Anything to do with cutting or machinery of any kind.
	2. Too young	Making firewood into bundles.	Not to chop wood, work at machinery, or carry heavy weights.
	3. Small stature	Errand boy	Do.
	4. Do	do	Do.
1911	1. Left knock-knee	Fringing machine, as this allows sitting.	Work necessitating prolonged standing.
	2. Operation for hernia years ago.	Ordinary work	No lifting or carrying weights.
	3. Small stature	Giving in	No weight lifting or work with machinery in motion.
	4. Knock-knee	Sew buttons on blouses	Not to use machines.
	5. Heart disease	do	Do.
1912	1. Small stature	Giving in	Nothing else in connection with weaving.
	2. Do	Winding	Nothing entailing overreaching or weight lifting.
	3. Post laparotomy scar	Light work in connection with printing.	Prolonged standing or machine work.

The Dewsbury advisory committee has made an investigation not only of working children, but also of school children who work out of hours, an evil which does not as a rule come to the notice of the medical or any other officers.

These surveys of the range of employments in which children are found, and of the working hours of children whose energies are presumed to be dedicated to the State in the work of growth and self-improvement, are suggestive of the possible disclosures, once advisory committees, schools, and medical officers unite, as they should in a comprehensive policy of protecting youth. There have been not a few investigations into the physical condition of working school children. While differences in the health of such children have been found to be dependent in part upon the nature of the occupation, the strain, confinement, etc., all indications point to beginning work at too early an age as a prime source of breakdown and later incapacity. There is a wealth of suggestive material to be found in the reports and investigation of a number of school medical officers. One of them will be briefly summarized.

(*a*) Paper boys, 89. Get up between 5.30 and 6 a. m.; usually have a piece of bread and perhaps some tea before they leave home; hasten to the station or news-agent's shop, which may be as much as 2 miles away from their homes, for bundles of papers, take the papers to various houses; length of round varies; time taken varies accordingly from 1 to 2½ hours; then a hasty breakfast at home before going to school. Many of the boys have an evening round also. The average wage is 2s. 6d. per week; some of the boys who sell papers, in addition to delivering them to regular customers, get a commission on the number sold, and earn from 4d. to 6d. per week. Their corrected average height was 1 inch, and weight 2½ pounds less than those of the 383 boys not employed out of school hours. Slight spinal curvature was found to be more frequent among these boys than among those employed otherwise, owing to the heavy bundles of papers carried.

(*b*) Milk boys, 37. Get up between 4.30 and 5.30 a. m.; have a morsel of food before leaving home, rounds generally take 3 hours or longer, afterwards a hurried breakfast, often eaten on the way to school. Some of these boys go around again during the dinner hour, some when afternoon school is over. Their average wage is 2s. 6d. per week. The corrected average height of these boys was 1 inch, and weight ½ pound less than those of the 383 boys not employed. Those who had worked for two years or more were found to be 2 inches and 3 pounds below the average.

(*c*) Errand boys, 66. These boys spend most of their spare time in the dinner hour and in the evening in delivering parcels or baskets of provisions; they often carry heavy weights, and are apt to take very hurried meals. They generally earn 2s. or 2s. 6d. a week. Their average height and weight were not found to differ much from the normal, but some who had worked for two years or more were found to be as much as 1½ inches and 5 pounds below normal.

(*d*) House boys, 77. Employed in the early mornings to clean boots and knives, carry coals and so forth, in private houses. Get up about 6.30; work for 1 or 2 hours before school; are often provided with breakfast by their employers. They earn about 2s. a week. These are picked boys who work under good conditions. Those examined were found to be on the average ½ inch taller and 2 pounds heavier than the nonemployed boys.

(*e*) Boys employed in miscellaneous occupations, e. g., garden boys and barber's boys, 41. Little or no difference was found between these and the nonemployed boys.

(*f*) Boys employed on Saturdays, and sometimes Sundays as golf caddies or as errand boys (38) were found to be of normal height and weight for their age.

The success of the experiment in Dewsbury has led the advisory committees in other places to seek the cooperation of certifying surgeons. Some sort of cooperation has been secured or promised in Huddersfield, Leeds, Halifax, Nottingham, Northampton, and in other towns. In Huddersfield the education committee passed a resolution authorizing the school nurses to assist the secretary of the juvenile employment advisory committee in following up cases.

The relation of medical supervision to the right start in vocation is clear enough. Inspection at the leaving stage is indispensable. All vocational counseling, labor exchange service, and aftercare must take their cue from the physician's report. Examination at this stage reveals the results of school life, home environment, incidental employment, and the inheritance of the candidate for a calling. This examination, furthermore, is of peculiar interest to the English people, because the children of this age are nearing the insurable age under the Insurance Act. At no other period in a youth's life is medical supervision more necessary, and from a public viewpoint more urgent. The prevailing practice in all the countries studied, as with our own, shows a too slight regard for this vital matter. The whole scheme of factory legislation, vocational schools, and social legislation in general, rests on insecure foundations if the medical supervision of adolescent workers is inefficient. Medical investigations in England have shown that physically unfit children are liable to a high degree of accident in the course of their work. An intrinsic value in medical supervision is that it supplies a method of individual selection of the worker, something no general provisions, such as factory acts, can as well accomplish.

The Employment of Children Act, 1903, contains the following provisions:

> A child shall not be employed to lift, carry, or move anything so heavy as to be likely to cause injury to the child.
>
> A child shall not be employed in any occupation likely to be injurious to his life, limb, health, or education, regard being had to his physical condition.
>
> If the local authority send to the employer of any child a certificate signed by a registered medical practitioner that the lifting, carrying, or moving of any specified weight is likely to cause injury to the child, or that any specified occupation is likely to be injurious to the life, limb, health, or education of the child, the certificate shall be admissible as evidence in any subsequent proceedings against the employer in respect of the employment of the child.

The local authority is thus given ample power medically to guide the young work seeker. Instances are unfortunately too few where the physician has thoroughly exercised this power.

What may yet be accepted as a necessity in the English scheme of vocational assistance is the appointment of special medical officers for the advisory committees, who shall act in a coordinate capacity with the school medical officer and the factory surgeon. These medical advisers would probably be assigned to work in connection with all the various types of schools, such as evening schools and trade schools, and with the children who use the labor exchanges.

Inspection at the place or time of employment goes only part way. The child-helping schemes so extensive throughout England and Scotland need above all else the reenforcement of a medical department with full powers to investigate occupations in their relation to a sound physical development. The absence of a medical research and health guidance department in almost all vocational assistance enterprises is responsible for much of their ineffectiveness.

IX. COMMENTS.

The preceding pages have attempted to show the magnitude of the schemes now under way in England and in Scotland and to set forth the details so far as possible by means of original documents. Difficulties in the development of those schemes have necessarily absorbed the energies of hundreds of people interested in boys and girls. To carry out a national project whereby every boy and girl and parents may learn what the employments are, and how to qualify for the desirable opportunities, has been a labor of immense difficulty, as it has been of social and educational value.

Information is being collected about juvenile employment which in time will be of immense use in further legislation. The work of the volunteers, who are getting both experience and training in their association with the advisory committees of the schools, will in time become the nucleus of important movements for improving the conditions of juvenile employment. The devoted volunteer service is certain to work out a technique through more definite schemes of preparation for the important duties it involves. The fact should be borne in mind that advice, training, or placement can not alone reform the existing unsatisfactory conditions of child employment. There is much to be said in favor of the labor exchange, whether it be for juveniles or adults. It is certain social waste to leave the labor market unorganized. From the viewpoint of the child-welfare worker, however, and of the educator, the success of a placement scheme lies not in the increasing number of vacancies which are filled, but in the diminishing of the causes which send young people into premature employment. Working conditions are only slightly and indirectly affected by the kindly supervision of an advisory board. It may be that in time certain labor exchanges, through exceptionally powerful advisory committees, will control the local labor supply to the extent of compelling more favorable conditions precedent to placement, but this is a long, uncertain, and roundabout method.

Experience teaches that legislative action alone can best cope effectively with so complex a situation. Evening industrial training for young workers can not be regarded as more than a passing solution. The growing tendency in the most advanced American school systems is to exclude children under 17 from the evening schools. In the minority report of the royal commission on the poor laws will be found several paragraphs which sustain this position. The report states:

> Useful as evening continuation classes may be to particular individuals, it is impossible for boys who are exhausted by a whole day's toil to obtain either physical training or the necessary technical education. We have, therefore, come to the conclusion that if we want to turn into competent and trained workmen the 300,000 boys who now annually in the United Kingdom start wage earning at something or other, there is only one plan. We must shorten the legally permissible hours of employment for boys, and we must require them to spend the hours so set free in physical and technological training.

This report, therefore, recommends:

(1) The statutory prohibition of the employment of any boy in any occupation below the age of 15.

(2) The limitation of the hours of employment of any youth under 18.

(3) The compulsory attendance of boys between 15 and 18 at a suitable public institute, giving physical training and technical education.

Every vocation scheme for the benefit of young people must inevitably reach these conclusions. Both the voluntary principle and the principle of benevolence break down or are thoroughly ineffective when confronted with the large mass of children whose energies and futures need to be protected. Nor can apprenticeship be regarded as a solution of the juvenile employment problem. England, like America, is quite in the dark as to what skilled and unskilled occupations really are, and consequently is little prepared to formulate the kind of training needed. Moreover, there has been during the last half century an ever-increasing demand for low-skilled labor as a substitute for the handworker employed before the widespread application of power, ingenious machinery, and new systems of operation. It is of course true that the right working out of the present labor registry and advisory plans must help better working conditions, as has been the case in the post-office messenger-boy service. But the fact remains that industry will continue to use an enormous and increasing amount of unskilled or partially skilled labor, and it is inevitable that a large number of young people, probably, the vast majority, will for a long time find their only opportunities in this field.

The most immediate problem with respect to these children is not an extension of evening training facilities so much as it is a thoroughgoing scheme of protection; not the acquisition of manual skill, as it is the conservation of their physical and moral vitality. Industry holds out diminishing educative possibilities. In the majority of occupations, indeed, there is no place for apprenticeship. Yet service to an individual or a group of individuals is none the less valuable because it fails to solve the problems of a multitude. It is much to be hoped that the excellent skilled apprenticeship and employment committees of London and the provinces will extend their work. They are helping many young people to a more favorable start in life than would have been possible for them without this assistance, while in the performance of their duties those committees are gathering useful data as to modern industrial conditions. Their members have been invaluable, too, in the development of the plans of the boards of trade and education. Apprenticeship provisions should by all means be furthered, but as a general scheme for altering the present stage of non-educative and subdivided employments, it is an impossibility. What the schools must ask of employers, however, in view of industry's vanished old-time educational returns, is at least a revival of the spirit and the motive in what was best in the old apprenticeship. The employer's contribution to this end is made up of two important factors; he must provide the leisure, through shortened workdays, and give his practical cooperation to the school authorities, who are bound to take in hand the drifting adolescent. Sooner than many people realize, the schools will be required definitely to perform some of the functions which have hitherto been distributed among such agencies as the home and shop. To accomplish this, the schools must undergo changes, as they have already changed in response to other social demands made upon them for a generation past. Comprehensive vocational assistance through specially trained teachers and others must become a part of the new machinery of service—service which should begin in the elementary grades and continue at least to the period of young manhood and womanhood. This seems to be the conviction of thoughtful people everywhere.

There are committees with no very deep conception of their duties. Critics of the Board of Trade point to them as arguments against the entire scheme. It is true that some committees and some bureaus do the perfunctory and conventional work of superficial advising and job finding. But it is hardly just to indulge in sweeping condemnation because there is lack of vision and understanding in particular instances. The best of the committees know that the school age must be raised, that volunteer advisory service must at least be reenforced by the responsible service of the paid specialist, that opportunities for vocational training must be indefinitely extended, that young workers should attend compulsory, daytime vocational and other educational courses, and that no young people should be employed except through the direction and with the guidance and supervision of juvenile advisory committees.

The question is sometimes asked as to the place of the parent in so comprehensive a plan of helping children vocationally. Those who face the facts of modern life know too well how little the parent figures as a directive influence under present conditions. The children practically do all the deciding, the parents even remaining in dense ignorance oftentimes as to what their children are doing. Among the contributions of the vocational-assistance movements in America, England, Scotland, and Germany not the least are the awakening of an efficacious sense of responsibility on the part of parents and the fresh guidance resources brought into the home.

X. NOTES ON GERMANY.

Although German literature on the subject of vocational counseling and the choice of a life career is considerable, and some of it of a most thorough and excellent character, there is at the present time not more than a beginning of distinct and organized activity in this field. German social enterprise has concerned itself thus far largely, among other things, with the immense task of establishing the continuation and part-time school system, which has become a world model, and the system of labor bureaus which place boys and girls who seek work.

Nevertheless the schools have not been indifferent to the career problems of the children. Before the school-leaving period draws near, and shortly before the fourteenth birthday, teachers and others call attention to the various wage-earning opportunities open to the children. They describe the supplementary training provisions of the municipality and the procedure in getting work through the labor exchange. In a few cities and towns municipal vocational information offices have been started—usually in connection with some well-established agency, such as the statistical bureau—for the purpose of advising parents, children, and teachers as to industrial conditions, the state of the labor market, and the nature of the demand for workers. These "consultation hours for parents," so called, are among the most interesting and promising activities in the recent German movement for organized vocational guidance. A notable instance of this type of work is to be found in the city of Halle, where the director of the statistical bureau, Dr. Wolff, has for several years conducted on his own initiative a department for vocational counseling. The abundant economic material of the office is made available to those who seek information as to the nature of various employments. Office hours are advertised when the director or an assistant will be found on duty for vocational counseling.

The schools, too, are keenly interested in preventing the children from becoming careless job seekers, and they take a personal interest in directing children to the nearest labor exchange and to other placement agencies. Parents are invited before the children leave school to attend informal conferences, at which a brief talk is given to point out the mischief of drifting into employment without forethought and plan. Pamphlets are often distributed showing what the various occupations are and their educational requirements; also the institutions, public and private, which give the required training. Specific advice is avoided by German teachers, who realize that giving occupational information is the work of a specialist and that people unprepared for this task should not assume the serious responsibility it entails. The school authorities nevertheless endeavor to use their influence in securing attendance of the leaving children at the labor bureau until they have been placed.

Once started in employment, the boy, and in some places the girl, will be required to attend the appropriate continuation or part-time vocational school for two or three years four or six hours a week. If the boy is in mercantile work he will go to a commercial school, and if in industry he will attend courses dealing with the practical or related theoretical work of his trade. For that army of children who are in unskilled callings classes are formed to give instruction in subjects common to a large group of miscellaneous occupations and helpful also in developing character and citizenship.

The question as to what further instruction a boy or girl is to receive is settled by the nature of the employment undertaken. Therefore, it is not the choice of a career which confronts the average German schoolboy, but the question as to how well he will do the work he is almost destined for. To be sure, the children have some choice as between entering the ranks of the skilled or the unskilled pursuits, the latter paying children, as is everywhere the case, relatively more attractive wages than the former. But for the most part, the social and economic position of the children settles the general class of employments which they are likely to go into.

In this fact lies the explanation for the absence thus far in Germany of a scheme of guidance comprehensive and supported by law. Guidance, it has been thought, was a somewhat needless procedure in the case of young people whose career was more or less a predetermined matter. Recent events show the discontent of thinking Germans with such a mischievous assumption and the situation which it has created. Many towns are distributing occupational handbooks and a large number of social agencies are working for organized schemes of vocational information and guidance to precede the employment stage.

Certain far-reaching changes in industrial conditions have brought about the new demand for vocational guidance. Germany's most successful part-time vocational schools are to be found where the factory system has not yet transformed the old-time methods of production. In southern Germany, where shops employing from 10 to 50 workers are the prevalent type, apprenticeship is still a possibility. Individual skill counts for much where the worker is not altogether a process or an automatic worker. Initiative and manual dexterity find scope in the small shop, where often a variety of tasks are to be performed by an individual. This is not the case in the factory-dotted areas of north Germany.

The part-time school as a State enterprise in apprenticeship training is only a logical continuation of the system which the employers themselves not very long ago supported in self-interest and managed as part of their function.

But in the rapid changes, from small to large methods of production, from a rural and semirural to an urban and mobile population, and with increasing subdivision of labor, an apprenticeship system can not alone meet the needs of thousands of young people facing the wage-earning life. Nor does the apprenticeship system, even though supplemented by the vocational school, assure a right start in life for all classes of children. Criticism has therefore grown in volume, and in the public addresses of leading German economists, educators, and social workers will be found cogent arguments for the establishment of supplementary guidance plans to help children and parents.

Despite the admirable placement and training provisions to be found in a number of German States, the fact remains that there is an unregulated and menacing drift of young people into trades, a drift which causes oversupply of workers in some industries, while in others there is a scarcity of workers. The economic results of this chaos have been pointed out at recent conventions of economists and labor organizations. The probable breakdown of training provisions and a condition of chronic unemployment and underemployment for a large percentage of the workers are the consequences. Thinking Germans no longer rely on the law of supply and demand to work magic in correcting the maladjustment. The tendency on the part of those leaving school to make straight for the immediately profitable unskilled occupations threatens the efficacy and appeal of the vocational school. In the trade and labor census of 1907 there were 350,000 young people noted as employed in miscellaneous callings, aside from the familiar trades. Of these not more than about 150,000 had had any vocational training, the rest being employed as helpers, in no need of specific efficiency training. There is no reason to believe that the number of such neglected factors in the working population has diminished. On the contrary, all indications point not only to an increase in their number, but to the possibility of a majority of young workers finding themselves before many years in the ranks of the blind-alley workers. Neither well-disposed individuals nor local communities are strong enough to deal with a situation whose roots are deep and wide. For this reason a number of experiments have been undertaken for the purpose of trying out what it is hoped may lead to a State-wide or Federal plan for vocational guidance.

Of late years, in Munich and in Pforzheim, parents, teachers, physicians, and officers of the labor bureau and labor unions have cooperated in conferences for the purpose of emphasizing the thoughtful selection of life work and of calling attention to less familiar and to overcrowded trades. Several labor organizations, too, have attempted a counseling service, but with little success, owing to their inability to give this work the time and resources which it requires. In 1908 the Halle bureau of statistics, already mentioned, opened its office evenings to information seekers. The schools were notified of the bureau's readiness to give information as to wages, conditions, and apprenticeship requirements of the various industries in the city. A secretary now keeps records of the advice given and endeavors to follow the progress of the children who have been counseled. The local labor bureau, of course, mediates in placing the children. The organizer of this experiment, Dr. Wolff, believes that the child's natural counselors, the parents, are often too busy and too little informed as to the nature of the various employments to be effective advisers. Parents' consultation hours were therefore established in the director's office to enable fathers and mothers to discuss with experts the vocational problems of their children. The consultation office has been open also to adults who sought information about various trades and conditions. The work has developed beyond the stage of mere information giving, definite suggestions being now given to young applicants, based on the bureau's study of their educational equipment, health, personal inclinations, and the financial condition of the family. When the decision is finally made by the parent and child, the help of the bureau is sought in securing an opening, and especially an apprenticeship opportunity for the boy. Private agencies and individuals are often enlisted in the search for a promising place. The bureau of statistics endeavors to keep its advisory material fresh by frequent study of the labor market, of demand and supply, and the promising avenues of employment. A record is kept of employers who will cooperate in an apprenticeship agreement. Various trades and commercial organizations have been enlisted in assigning members to give public lectures on the various trades, businesses, and professions. In 1908, the year of opening, 27 applicants made use of the Halle consultation hours; 54 in 1909; 79 in 1910; and 104 in 1911. The range of visitors to the office has now grown to include a large number of business men, manufacturers, teachers, and public officials who desire help in a large variety of occupational problems. Of 264 individuals counseled during the first three years of the consultation hours' service, 128 had had only elementary schooling, while the others were distributed among the higher schools. Two-thirds of all who applied were 14 years of age or under. Eighty-five were started in life under apprenticeship arrangements.

Halle has not neglected its girls. Consultation hours for girl apprentices have been started by a body of public-spirited women, while the task of starting girls as domestic servants is looked after by the housewives' association of the city. Halle's example has been followed by half a dozen other cities, the statistical bureaus, which in Germany represent a high type of efficiency, usually acting as centers of vocational information for schools, parents, and children.

At the conventions held during recent years by associations of labor-exchange officials, of economists and social workers, notably those held in Dusseldorf in 1910, and more recently in Breslau and

Elberfeld, the papers which attracted particular notice were those advocating municipal vocation bureaus.

This proposal has borne fruit, for we find similar recommendations appearing in the political platforms of various parties, especially in relation to social policies for cities and towns. In August, 1913, Dusseldorf opened a guidance office for the city and surrounding districts, accompanied by placement bureaus for apprentices. Frankfort is carrying on a series of motion-picture lectures showing the various employments, the object being to interest boys and girls in thinking about their future vocations: The Berlin labor-bureau central office conducts public motion-picture shows with a like purpose, the first of these having been given in May, 1913. In 1912 the Leipzig manufacturers, association started a guidance bureau for young people. In this enterprise they have not had the support of the workingmen, for one reads in their organ, the Leipzig Labor Daily (Leipziger Volkszeitung) of May 14 and 15: "The vocational-guidance bureau ought not to be in the hands of an employers' organization until we secure a very effective law for the protection of apprentices against overwork and underpay;" and "Such bureau should be a State or municipal institution."

There are other advisory offices throughout Germany, too numerous indeed to record in this brief survey of significant beginnings in organized vocational guidance inspired by social service aims. Some of these offices are supported by philanthropic societies, some are connected with established charities, some are employers' devices to get more suitable employees, and others are slight experiments looking to a public undertaking of the work.

The vocational guidance service of some of the German labor bureaus has been so excellent that a brief account of their work will be of interest. In Strassburg, since 1902, the municipal labor bureau has endeavored, with the official support and direction of labor organizations and the chamber of commerce, to start boys in life as well as possible. The control committee is made up of employers and employees from various occupations of the district. This committee seeks information as to suitability of the employers who announce the vacancies. All boys who are about to leave school, whether with work in prospect or not, are obliged to report themselves with their parent to the labor bureau, the school officials taking pains to secure this attendance. The teacher distributes cards to be filled in by all the boys and girls leaving the elementary schools, and their parents are summoned for an evening conference with the school authorities, who explain the purpose of the cards. Within a few days the cards must be taken to the labor bureau. Each boy at leaving time is examined by the health officer as to his physical condition, and notes are entered upon the boy's card. This card is examined by the labor bureau officials, as well as by employers' committees. All boys and girls report back regularly with their control cards until they have been placed as suitably as circumstances permit. To help in cases where poverty would force an unwise choice of employment, scholarship grants, or subsidies, have been started with Government aid, and there are other instances of special financial assistance to start the boy properly.

The Munich labor bureau, like that of Strassburg, just described, works in intelligent cooperation with the school department. The boys go out of school to a large variety of apprenticeship openings, such as mechanics, bakers, locksmiths, woodworkers, etc. They are carefully examined medically. Every effort is made to prevent waste and drifting in undertaking employment. The German people have a horror of waste in any form, particularly the waste due to intermittent employment. Everywhere vocational advice stresses the importance of preparation for permanent work.

Germany, like England and our own country, is not without its grievous problems of child labor. Not all the children can avail themselves of the advice given; and there are instances enough of parents who are ignorant and irresponsible. Efforts toward better regulation of juvenile employment, the raising of the compulsory school age, and the prohibition of certain employments to minors are energetically going forward. Nevertheless, Germany has laid foundations of social and educational policy which are of immense assistance in the present efforts for vocational guidance. It is a truism in German educational thought, that no occupation, whatever may be its character or problems of organizations, can be permitted to go on indifferent to the developmental needs of its young workers. Compulsion has long been looked upon, at least in some parts of Germany, as the foundation of success in any scheme of training young workers. This principle is becoming the universal practice in the Empire. Influenced by this, there are advocates of a like policy with respect to the start in life of the boys and girls; that is to say, while decision must alway necessarily be a free act, and besides the free act of parent and child, there should be suitable provision, publicly supported, for the supplying of vocational information and expert guidance to young people who are headed for employment. While the industrial field is an object of special emphasis with the leaders in the German movement, there is no failure to recognize the fact that such guidance is indispensable to all career seekers, whether in the professions, commerce, trades, or Government service.

When contrasted with the widespread organization of counseling service in the United Kingdom, the foregoing account of German beginnings would seem to indicate a rather tardy recognition of the problems which confront the school children at the transition stage.

Such impression would not do justice to the facts. The truth is that in no other country is there a larger body of intellectual leaders who have been thinking deeply on this transition problem. University professors, recognized authorities in social and civic affairs, distinguished economists, party leaders, publicists, and men and women at the forefront of advance movements in the Empire are among the conspicuous participants in the beginnings which this chapter has only briefly sketched.

XI. SCHOOL AND EMPLOYMENT.

Some of the instructive experiments by school and other agencies abroad have now been described and their social bearing noted. This final chapter will attempt to suggest an outline for an American school policy with respect to the relation of our schools to the start in life of their children, profiting so far as possible by the lessons and cautions of foreign experience. In the absence thus far in this country of considerable experience in connecting schools with employment and in organizing safeguards for the start in life, it is of course obvious that little more than a tentative draft of a policy and of the possible next steps can be ventured; yet for all that actual practice may suggest in the way of detail, machinery, and administration, there are certain principles, fundamental to any service connected with the start in life. Experienced social workers, educators who make their school work function as social service, and efficient workers connected with the movements for vocational guidance and education are in no doubt as to the need of taking the next steps and as to what at least one or two of these steps should be.

To competent students of the problems considered in this study, it is clear that a thorough scheme of vocational advising and of training necessarily involves provisions for placement, for supervision, and for methods of organized study which are calculated to yield material for enlightening public opinion and for legislative action. Vocational service of any kind is so large an undertaking that specialized phases of it may well occupy the whole time of any organization, but it is submitted that any scheme of vocational service which does not in some way come in direct contact with the problems connected with the actual start in life of youth is in danger of finding itself an unreal undertaking, busied with lifeless abstractions regarding shadowy beings, instead of men, women, and children.

Participation, then, is here advocated as fundamental to any successful scheme of vocational service; such participation as we know to be the best feature of the neighborhood worker's activities.

Contact with the practical world insures that salutary concreteness of criticism and appraisal which sound growth requires. Some personal touch with boys and girls and men and women, and the trying out of one's theories and capacities as a vocational counselor in real experience, are the key to successful vocational assistance.

Workers in the fields of vocational education and guidance, therefore, whether they be in vocational schools, labor exchanges, advisory committees, or vocational guidance enterprises, are expected to face their task from two standpoints when helping young people to a start in life. They are forced, necessarily, to deal with the working world as they find it, and they are equally obligated to illumine their work with an ideal of what ought to be the conditions. A knowledge of existing conditions is the foundation of the daily, personal service, which a vocational agency is called upon to render; but without the corrective of a social vision any vocational scheme, whatever may be its immediate practical benefits, can hardly be regarded as an important instrument of human conservation. The knowledge here suggested can not be based on mere fragmentary accumulation of many kinds of occupational details, gathered in the course of visits to work places; it must be knowledge founded on organized data gathered by the specialist trained in the technique of vocational investigation. The vision and ideal here suggested must not be a vague and futile longing for something different. but an intelligent purpose founded on clear sight of a goal, and expressing itself in aggressive and telling ways.

It is now trite to say that school life is sharply ended at the option of children who go to work as soon as the law will let them. Likewise is it now a truism that this leaving time has been mostly neglected and the children exposed to peculiar dangers. The child's entry into working life has not been on the whole looked upon as a special concern of the school. Individual teachers and school principals have always, doubtless, taken an interest in individual children, or even in entire classes. But, outside a few cities in this country, one will not find any systematic and worth-while effort to compile and interpret the work histories of children who have left school for employment; and few indeed are the agencies which concern themselves with the transition problems of youth in the abyss between school and work. There are, to be sure, the vocational schools and vocational departments of our high schools, which, as a matter of course, are more or less active in securing employment for those whom they have trained. Not many a school has gone beyond the mere placement stage for its pupils, and not many have scrutinized the occupations sufficiently to influence their own curriculum. But if the vocational schools, close to work conditions though they presumably are, and more pressingly required than other types of schools to concern themselves with the start in life, have, on the whole, so little organized the machinery and formulated the principles of service in helping young people during the transition period, what shall we say as to the public schools generally?

The children who leave the schools of our country, whether they graduate or drop out, are obliged to find themselves, somehow or other, as workers. The schools have done little, specifically, to point the way. In a sense, the schools deserve much praise for the little they have been doing toward a vocational start in life; for with no resources, time, or preparation, their efforts in this difficult field could only have been absurdly inadequate and possibly harmful. Several causes account for the failure on the part of the public to support the schools in organizing the much needed start-in-life service. In the first place, the schools have been kept so busy with what is called preparing for life, that the teachers have been given no leisure for more active contact with that life. On the whole, the American public has not called too vigorously for such vital participation on the part of the teachers. In fact, the situation has not been greatly encouraging to that growing number of teachers who are disheartened over much of the present lifeless routine of fitting for life. The community has been, on the whole, too little alive to the moral hazards and the hard perplexities which the young job seeker experiences. Finally, a persistent idea regards work seeking and employment as a private concern of the individual, and the employment bargain and all that follows it as nothing more than the personal affair of the bargaining parties.

Now our best practice and belief continually belie this obsolete notion. That society feels its vital stake in all that attaches to the employment contract, particularly of minors, is abundantly demonstrated by the great variety of protective measures going forward, such as school-working certificates, health and factory inspection, licensing rules for employment agencies, and the increasing number of child-labor laws and of State-aided vocational training opportunities.

The English system of juvenile advisory committees rests on a clear recognition of society's duty to protect and befriend its young work beginners. The increasing importance of school people in the work of these committees is suggestive of the place which the schools will occupy in the near future as guardians of the adolescent.

From two directions the schools are compelled more and more to consider their relations to the start in vocation. On the one hand, the movements for vocational training and guidance bring the school face to face with the occupational world; on the other, the organization of the labor market through public employment offices, a field in which we have been thus far lamentably backward, will oblige the schools to work out a policy with respect to these agencies. As yet few States maintain public employment offices; but, doubtless, there will be many more, as the wastefulness of present work-seeking methods is realized. Nevertheless, not many schools will be satisfied merely to refer their leaving children to a near-by public employment office, with no voice, oversight, or power.

To a considerable degree the success of vocational guidance and training efforts is conditioned by the thoroughness of their articulation with working conditions and with social movements. Within a well-defined sphere of its own in the school system, vocational service is of the utmost value. It endeavors to help pupils to self-knowledge, and to reconstruct school programs in order that they may more sensitively minister to the self-discovery and economic needs of different pupils. Vocational service—both guidance and training are here included—is an instrument for talent saving, and for interpreting school life in terms of career building. In its larger relationships, however, vocational service is only one phase of the social organization of school and vocation. It introduces into education the motive of the life career and the idea of fitness of the individual, apart from class or group; it introduces into employment the idea of fitness of the task, and appraises the occupations in terms of career values as well as social worth.

The passing of the labor exchanges act was facilitated by the belief that a personal advisory service in connection with work seeking would help lessen the waste due both to job hunting and to misemployment. No little addition to the volume of unemployment comes from what Mr. W. H. Beveridge, director of the labor exchanges, calls "qualitative maladjustment." No more promising institution than the public school exists to undertake the task of qualitative vocational adjustment. The question arises as to whether the public-school system would best undertake alone to deal with the start in vocation or leave it to other agencies, while reserving for itself the task of providing for needs which arise in the course of employment, such as further training opportunities. It is submitted that the schools will have to concern themselves, actively and dominantly, with every phase of the vocational start in life. Is the average school system ready to undertake this new and enormously difficult business? It is not. Indeed, so little is it prepared to do this work at the present time that a hasty undertaking of it would probably indicate a lack of understanding. It is doubtful, in the first place, if a school department can alone effectively organize the labor market for young workers. The pronouncements on this subject by Scotch and English authorities, given in preceding chapters, are convincing. On the whole, experience seems to support the proposition that the school system is not the most suitable agency to attempt the organization of the labor market for the young, and the correlative proposition that the carrying on of juvenile employment agencies without control over them by the school, is not in the best interests of the children.

It is assumed that work seeking in this country will more and more be under the direction of the public through State or possibly municipal agencies; for we are almost the only advanced industrial country to continue the present demoralizing chaos of an unorganized labor market. Public labor bureaus, when rightly managed and properly understood, are capable of considerably larger services than labor registration, important though this is. Developments in the best of these bureaus in England and in Germany promise a new type of civic center and agency for industrial betterment. Everywhere the best practice is to separate the juvenile from the adult departments of these bureaus, and the girls' from the boys' departments. More and more the young work-seekers' problems are being treated as something distinctly different from those of adults. We are confronted, then, with the need of not only organizing placement provisions for the young, but, in addition, a comprehensive instrument of social and educational protection.

The public school must remember the fact that it is, primarily, an educational institution with social aims. What a century of child-welfare effort and experience has taught the friends of working children, the schools can, least of all, afford to ignore. More than any other institution, the school must stand for a high minimum of protection for all children. It is not to the credit of our schools that, on the whole, they have been unaware of a situation which many an employer has known for some time, and this is, the economic uselessness of children from 14 to 16. Schools have sometimes been willing to plunge into small or large employment schemes as if full-time work were the right thing for growing children.

Of the public schools, more than of any other institution, public or private, we have the right to expect a clear vision and a determined stand with respect to the interests of childhood and youth. Private societies do and may, by way of experiment, make concessions and compromises in order to carry out their various purposes, but in the practice of the public-school system we look for exemplification of the permanent principles which should control all the activities in which young people find themselves.

There are three distinct aspects of the problem of adolescent employment: The educational, economic, and social. Through extension of vocational training opportunities, and especially through the provision for prevocational schools, which, when their purposes are better understood, will become *self-discovery schools*, and as such afford young people and their teachers a most important basis for vocational guidance, the schools are beginning to deal with the first of the three aspects named.

As public labor offices grow in number, the economic side of the problem will be given at least a preliminary treatment. This will be not more than preliminary, however, for a juvenile employment department is, notwithstanding general opinion, a placement agency only secondarily. It is in facing the third or social aspect of the entire problem that we find the basis for satisfactory organization.

This proposed social basis for juvenile labor organization is intended not so much to protect the boy worker or girl worker under 18 against employers as against themselves. The greatest difficulty in dealing with the boy who is about to leave school for work lies in the fact that he regards himself as a worker who has outgrown the learner. Not until disastrous experience has overtaken many of these children do they begin to realize how much a learning attitude would have meant in building a career. A large part of this difficulty is due to leaving the question of the boy's future unconsidered until school-leaving time.

As we do things piecemeal in this country, we are likely to find in a number of places a vocation bureau in the schools, with perhaps a number of vocational training classes; a separate employment bureau of the city or State to which boys are sent or drift; and perhaps a private or semipublic advisory body with no real power, making futile efforts to help the troubled children with a disorganized machinery of service.

We need to write into the law establishing labor offices that a juvenile department shall be managed by a central executive committee appointed by the school system, which committee shall be made up of school people, employers, social workers, and employees, to advise as to the school vocational guidance and training activities on the one hand, and manage the occupational research and placement supervision activities of the labor bureau on the other. This committee should be empowered, through health officers and other trained specialists, to study children; to take them out of work places, if need be; and through scientific investigations to list occupations from the viewpoint of opportunity as well as their manifold reactions on the worker. Children under 16 are to be under training, part time at least, until the public is ready to care for their entire 14 to 16 year period.

From what has been said regarding the duties of a juvenile employment agency, with its suggested two-fold powers, namely, close supervision of the vocational activities of the school system and control over placement and its associated features, it is clear that "employment agency" is a misnomer. Perhaps a better name for such a body and agency would be the "vocational service bureau." Service, intelligent, deliberate, and coordinated with the work of all existing upbuilding agencies, is indeed the main business of an employment office for minors. There are problems connected with such employment of the greatest importance to the public, and on these we have little or no information. These are the amount of juvenile underemployment, misemployment and unemployment; the causes of maladjustment and how far training and what kind of training can lessen these causes; and the specific, thoroughly analyzed requirements of the occupations. To enlighten the public as to these matters and secure such constructive legislation as may be necessary is perhaps the most far-reaching work which such a service bureau can do. It is not difficult to conceive that a public enterprise which combines help to groping youth with social planning will in time have laid foundations of a service which will safeguard, strengthen, equip, and inspire boys and girls for their appropriate work to an extent nowhere as yet to be found.

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Published by Women's industrial council, London. (6d.)

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——— Letter on "Labour exchanges and education." School government chronicle, August 13, 1910.
Mr. Mundella is secretary of the National education association.

Myers, J. M. The juvenile side of the National labour exchange. School child, May, September, and October, 1910. (1d. each.)

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——— Street trading by children. School child, June, 1910. (1d.)
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Pub. by the National women's labour league, 3 Lincoln's Inn Fields, London, W. C. (½d. monthly.)
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Rittermaster, D. B. Unemployment and boy labour. St. George, January, 1907. (1/—.)
Russell, C. E. B. Home office schools and juvenile street trading. Charity organization review, November, 1910. (6d.)
Sadler, M. E. Report of lecture on compulsory continued education, to the Fabian education group. Fabian news, v. 21, no. 2, January, 1910. (1d.)
Sheffield, Lord. Half-time labour. School hygiene, March, 1910. (6d.)
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——— The halving of boy and girl labour. Crusade (supplement), June, 1911.
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Vassall, Archer. The problem of the average boy. Science progress, April, 1913. (5/—.)
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Yearbook of social progress, 1912. London, Nelson & sons, 1913. (2—n.) p. 334–69, 370–413.

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Care committee work in Birmingham. School child, March, 1913; April and May, 1913. (1d each.)
Continuation schools and labour. Toynbee record, November, 1909. (1 d.)
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The labour exchanges for young people. School government chronicle, October 29, 1910.
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The London juvenile advisory committees. School government chronicle, February 3, 1912.

New schemes under the choice of employment act. School government chronicle, December 17, 1910.

The peril of the labour exchanges and their opportunity. School government chronicle, July 2, 1910.

Revival of apprenticeship for boys. Cambridge house magazine, April, 1910. (6d.)
Published for Cambridge university settlement.

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The Christian commonwealth, March 15, 1911. (Usually 1d. 6d, back number.)

Times (educational supplement). Schools and labour exchanges. November 1, 1910. (3d.)

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Shops act, 1911. To amend and extend the Shops regulation acts, 1892–1904. London, Wyman & son.

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Adopted by Birmingham education committee, December 16, 1910.

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Committee on wage-earning children. 9th & 10th annual reports, 1910. 11th, 1911. London, Cooperative printing society.

Imperial education conference. Report, 1911. London, Wyman & sons. 267 p. (Cd. 5666.) (1/—.)
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Address of Council, 8 Sandon terrace, Liverpool.

National conference on the prevention of destitution. Papers and proceedings, 1911. London, P. S. King & son. (10/6 n.)

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Scottish council for women's trades. Conference on the employment of children. Report, 1911. (6d.)
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—— - ——— Child wage earners in Great Britain. Washington, Government printing office, 1909. (Bulletin no. 80.)
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——— Consultative committee on attendance, compulsory or otherwise, at continuation schools. Vol. I. Report & papers, 1909. (Cd. 4757.) (1/6.) Vol. II. Summaries of evidence, 1909. (Cd. 4758.) (1/6.)
——— Report on the working of the education (provision of meals) act, 1906, up to March 31, 1909. (Cd. 5131.) London, Wyman & sons. 50 p. (3d.)
Boy labour in the Post office. First report of standing committee, with instructions issued by the Postmaster general. 1911. London, Wyman & sons. (Cd. 5504.) 18 p. (2½d.)
——— Second report of standing committee. 1911. London, Wyman & sons. (Cd. 5755.)
Buckmaster, Stanley Owen. Report on the by-laws made on the 29th of January, 1910, by the L. C. C. under the employment of children act, 1903. London, Wyman & sons, 1911. 18 p. (Cd. 5497.) (2½d.)
Chief inspector of factories and workshops. Annual report, 1909. London, Wyman & sons, 1910. (Cd. 5191) (2/6.)
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Departmental committee on the employment of children act, 1903. London, Wyman & sons, 1910. Vol. I. Report. (Cd. 5229.) (2½d.) Vol. II. Evidence, etc. (Cd. 5230.) (4/6.)
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——— Report, 1912. London, Wyman & sons. (Cd. 6503.) (2½d.)
——— Report, 1913.
Edinburgh school board. Cooperation between the Educational information and employment bureau and the Labour exchange. 1911.
——— Educational information and employment bureau. Leaflet, circulars, and forms issued in 1909.
——— Scheme for the establishment of an educational information and employment bureau. Adopted by the board, July 20, 1908.
Education (provision of meals) act, 1906. Report on the working of, for the year ended March 31, 1910. London, Wyman & sons. 31 p. (Cd. 5724.) (2d.)
Handbook for the use of the local advisory committees for juvenile employment in London. 1913. p. 35. (Prepared for the London (central) advisory committee for juvenile employment approved by the Board of trade under the labor exchanges act, 1909.)
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See index under subject.

Interdepartmental committee on partial exemption from school attendance. Vol. I. Report, 1909. (Cd. 4791.) (2½d.) Vol. II. Evidence, etc., 1909. (Cd. 4887.) (2/5.)

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Labour exchanges act, 1909. Special rules with regard to the registration of juvenile applicants in England and Wales made in pursuance of regulation no. IX of the general regulations for labour exchanges managed by the Board of trade. 1910. (1d.)

London county council. By-laws made by L. C. C. under employment of children act, 1903. (1498), London, P. S. King & son. (1d.) 1912.

——— Handbook containing general information with reference to the work in connection with the Children's care (central) sub-committee. 1910. No. 1332.

——— ——— 2nd ed. London, Southwood Smith, & co., for L. C. C. No. 1556. 154 p. (1/6.)

——— Handbook of the Council's service and the opportunities afforded to boys for obtaining adult employment therein. 1910. No. 1346. (6d.)

——— Preliminary memorandum on the work of children's care committees, 27th July, 1909.

——— Report and resolutions of the Council. (6th April, 1909) and Education committee (24th March, 1909) with regard to the reorganization of children's care committees. (Leaflet issued 11th May, 1909.)

——— Report of the section of the Education committee appointed to consider the question of apprenticeships, 1906. No. 925. (1/—.)

——— Report on juvenile labour in Germany, and how it is being dealt with, by Miss Durham. 1910. No. 1358. London, P. S. King & son. (3d.)

——— Report on the apprenticeship question in minutes of proceedings of the Education committee of the Council on Feb. 24th, 1909. London, P. S. King & son. (6d.)

Memorandum by the Board of trade and the Board of education with regard to cooperation between labour exchanges and local education authorities, exercising their powers under the education (choice of employment) act, 1910. 1911. (1d.)

Reports and statistics regarding continuation classes of central institutions, 1909–10, and 1910–11. London, Wyman & sons, 1911. (Post free, 8d.)

Reports, statistics, etc., relating to continuation classes and central institutions. 1910–11, and 1911–12. London, Wyman & sons, 1912. (6d.)

Royal commission on the poor laws and relief of distress. 1909. Report. London, Wyman & sons. 1238 p. (Cd. 4499.) (5/6.)

——— Appendix, Vol. XX. Report by Mr. Cyril Jackson on boy labour. 1909. London, Wyman & sons. 230 p. (Cd. 4632.) (3/9.)

——— Report on Scotland. 1909. London, Wyman & sons. (Cd. 4922.) (2/8.)

Scotch education department. Mem. on the medical examination and supervision of school children. Issued 31st March, 1909.

——— Circular 433. Aug. 10, 1910. Continuation classes and employment agencies.

Standing committee on boy labour in the Post office. London, Wyman & sons, 1913. 20 p.

LIST OF WORKS IN GERMAN.

Albrecht. Berufsberatung. (Sammlung) Kultur und fortschritt, nr. 382–83. Gautsch b. Leipzig, F. Dietrich, 1911.

Shows the advisability of guidance offices, directed by properly instructed persons, in contrast with service given by employment agencies. In the same publication has appeared: Fuerth, Henriette. Die berufstätigheit des weiblichen geschlechts und die berufswahl der maedchen mit wegweiser für die weibliche.

Altenrath J. Berufswahl und lehrstellenvermittlung. M. Gladbach, Volksverein, 1911.

This treatise gives a very good survey of the development of the apprentice system; it treats of the difficulties in unguided choice, and regards organized guidance as the foundation of an up-to-date apprenticeship movement.

Arbeitsmarkt. W. 35 (Jahrgang 1910).

Bechtold, F. Der volkswirt als ratgeber bei der berufswahl. In den Volkswirtschaftlichen blaettern, 1911. N. 11.

Beitraege für jugendfuersorge. Nuernberg, K. G. Fischer, 1910. (Jugendfuersorge und lehrstellenvermittlung.)

Bericht über den kaufmännischen lehrlingsnachweise der handelskammer in Bochum für 1911. (Arbeitsmarkt jahrgang 15, seite 425. Berlin W., Georg Reimer. 35.

Bericht über die taetigkeit der lehrstellenvermittlung des staedtischen arbeitsamtes Stuttgart. (Arbeitsmarkt jhrg. 15 S. 537.)

Report of the apprenticeship agency of the Stuttgart labor office from October 1, 1911, to July 31, 1912.

Die berufswahl der schulentlassenen jugend. (Sammlung) Kultur und fortschritt. Gautzsch, bei Leipzig.

This volume shows what callings pupils from the towns of Breslau, Wiesbaden, and Berlin have chosen on leaving school. The pupils not only of the board and intermediate schools but also of higher educational institutions are recorded.

Centralisierte auskunftsetelle für frauenberufe.

Berlin gives special information to the parents of girls who leave school, and to all that demand advice in these matters about vocational guidance of women, in a special office.

Deutscher ausschuss für technisches schulwesen. Berlin, Charlottenstrasse, 85.

Hahn. Die berufswahl und koerperliche anlagen. Heft II des deutschen Vereins für volkshygiene. Muenchen und Berlin, R. Oldenbourg, 1904.

The author shows the relation of physique, etc., to the vocations. Vocations for the handicapped are discussed.

Hampke, Th. (Hamburg) Lehrstellenvermittlung.

Handbuch für jugendpflege, herausgegeben von der deutschen centralstelle für jugendfuersorge. Langensalza, Hermann Beyer und söhne.

Jahresbericht des verbandes deutscher arbeitsnachweise für 1910 und 1911. Berlin, 1912.

The apprenticeship work of the Board of workmen (craftsmen) at Breslau from October, 1910, till July, 1911. Arbeitsmarkt no. 15, page 85 (S. 88).

Die jugendlichen arbeiter in Deutschland. Jena, Gustav Fischer, 1911.

Kaup. Sozialhygienische vorschlaege zur ertuechtigung unserer jugendlichen. Berlin, C. Heymann, 1911.

The most interesting chapter is the second. School medical inspection, supervision, and instruction are discussed. What England and a large number of German cities have done on this subject is described. The author pleads for the activity of the school doctor not only in behalf of pupils in school, but also when they have left it. They ought to give regular reports about the health of the pupils, and these should be an essential help in the question of life work.

Das lehrlingswesen und die berufserziehung des gewerblichen nachwuchses. Berlin, C. Heymann, 1912.

A report of the fifth conference of the Public statistical officers, July 19-20, 1912, in Elberfeld. Contains also discussions. The report is written by Dr. Altenrath, of Berlin. The address of H. Wolff, of Halle, deals with vocational guidance and agencies for apprenticeship.

Lehrstellenvermittlung und arbeitsnachweise der handwerkskammern und innungen, 1909, bearbeitet vom deutschen handwerks- und gewerbekammertag.

Levy-Rothenau, Josephine. Die deutsche frau im beruf. Praktische ratschlaege in der berufswahl. 3. auflage, Berlin, W. Moeser.

This third edition gives, like the preceding one, a good description of women's work. As the director of the board of female vocations of the German women's associations, the author has had ample opportunity to secure practical data. This book covers the range of women's vocational activities, and treats of the changes of the last few years. Besides the description of the training demanded, the length of special instruction, expenses, prospects in getting situations, there is a detailed statement of the individual demands, and the mental and physical requirements for the different vocations. This book is intended as a guide for parents, women's guidance agencies, the labor offices, agencies for procuring apprenticeships, social workers, teachers, clergymen, physicians, guardians, etc.

Manual for the special care of youth. Ed. by the German central association for the special care of youth. (Dr. Frida Duersing.)

CONTENTS.—Part I. (a) The young people in the country. (b) The youthful workmen in the cities and capitals. (c) The metropolitan girl of the lower class. (d) The sons and daughters of the citizens. (e) The students in the colleges and universities. (f) The school girls and grown-up daughters of the well-to-do families.

The psychology of the age of development: Its physiology; its hygiene.

The young people in the eyes of the law and the state: (a) The minor in private law (adoption; the right of guardians); the care of the orphans and professional guardianship. (b) Compulsory education. (c) The minor in the penal law. (d) The youthful idler; the vagabond. (e) The minor in the law of trade. (f) Service in the army and navy. (g) The law about unions.

The youth in economic life: (a) The youth as a part of the population; statistics of births, deaths, immigration. (b) The young people as a national asset; the cost of degeneration; the cost of infant mortality. (c) The adolescents in working life: conditions. (d) Vocational guidance based on statistics and school reports.

Training: (a) Pedagogy of the age of transition. (b) Aims, principles, and problems of training of the men and women of the higher classes. (c) The same of the middle and lower classes.

Part II. The special care of youth and its aims: (a) Unions of youth and homes for youth. Example—The union of apprentices and assistants of Hammerbrook. The Wartburg union of Frankfort, M. (Jugendpflege). Special care of the youth of the Protestant church parish, Kupper, O. L. The Girls' friendly society, Rotenburgsart (Hamburg). The Girls' congregation and the Girls' school for further instruction in Hochnenkuer, etc. (b) Special care (Jugendpflege) for the youth in primary and in continuation schools. Example—The clubs of Berlin for the youth (Schneidemuhl, Krefeld). (c) Special care for youth in the largest manufactories (Grohsindustries). Examples—Special care of youth in dye factories (Fr. Bayer & Co. at Leverkusen, near Mukelheim on the Rhine). (d) Special care for youth in vocational organizations. Examples—Adolescents of the German national union of the assistants of commerce. (e) Other youth organizations. Examples—Special care for youth at Oberrealschule in Mukelheim and the Rube river. (f) Special care for youth in the administrative districts of the state. Example—Special care for the youth of the town of Govlitz-Gilesia.

Part III. Duties in the special care of youth: (a) Religious and moral care for youth. (b) Culture of youth; the theater of youthful actors and for youth; good music in boys' clubs; visits to museums, etc. (c) Scientific instruction; special classes and teaching. (d) Exercises in manual skill. (e) Evenings for pleasure, conversation, and other recreation: 1. Bodily exercises—Games, gymnastics, sports. 2. Sports—Rowing, sailing, swimming, rescuing, cycling, skating, winter sports. 3. Walking, military games, dancing, Dalcroze (Dresden) exercises. (f) Vocational guidance—labor offices. (g) Offices for apprenticeships.

Mischler. Aid for apprentices. Special publications of the Labor exchange magazine. Wien, 1911.

The author shows how the town of Gratz (Steiermark) has carried out the idea of joining the agency of training apprentices with the Labor exchange.

Programm der gewerbe- und handelsschule fuer maedchen in Cassel.

This school prepares girls for trade, household duties, commerce, and for governess examinations. It places the pupils who leave school.

Soziale praxis. Berlin, W. Duncker und Humblot.

Gives numerous papers on vocational guidance. No. 20 contains two essays on advising adolescents (minors) in England. German title—Abhandlung ueber die beratung der jugendlichen bei der berufswahl in England.

Tauch. Das gewerbliche lehrlingswesen in Deutschland seit dem zukrafttreten des handwerkergesetzes vom 26. Juli 1897, mit besonderer beruecksichtigung Badens. Freiburg, Herdersche verlagshandlung, 1911.

In a general sketch of apprenticeship a chapter is devoted to cooperation in placement work, and vocational guidance; labor exchange officers are criticized for lack of personal relation to the parents and young people with whom they come in contact.

Wolff. Elternsprechstunde und berufswahl der Stadt Halle a. S. Heft 2 O. S. 87.

These papers show how the town of Halle provided consulting hours for parents; report on progress is given. In the annual statistical reports in Halle details are regularly reported as to the age, sex, schooling, and vocational plans of those who seek advice.

Zucker, Gertrude. (Charlottensburg) Die beratung bei der berufswahl mit besonderer beruecksichtigung der weiblichen jugend.

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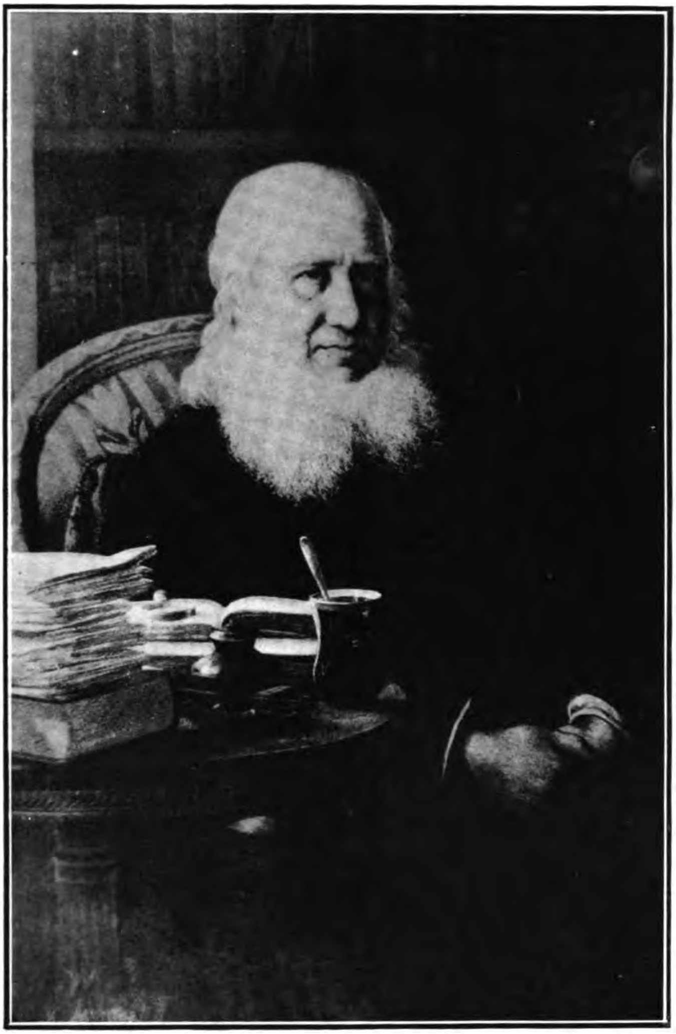


BISHOP GRUNDVIG, FATHER OF THE FOLK HIGH SCHOOLS IN DENMARK.

UNITED STATES BUREAU OF EDUCATION
BULLETIN, 1914, NO. 5 - - - - - - - WHOLE NUMBER 576

THE FOLK HIGH SCHOOLS OF DENMARK

By L. L. FRIEND
STATE SUPERVISOR OF HIGH SCHOOLS OF WEST VIRGINIA

DEPARTMENT OF THE INTERIOR

WASHINGTON
GOVERNMENT PRINTING OFFICE
1914

INTRODUCTION.

So great has been the part that the folk high schools and their offspring, the agricultural schools, have had in the intellectual and economic development of rural Denmark that they are worthy of the closest study by those interested in the intellectual and economic improvement of our own rural population. The founders of these schools and those who have developed them have broken completely away from ancient educational traditions and, having faithfully interpreted the educational needs of their people, have sought to meet them in the most direct and practical way possible. This we also must do if education is to become the vital force that it ought to be in the enlightenment and development of our rural population. My own feeling after visiting Denmark and making a serious study of the folk high schools and their methods is that they have some very practical suggestions to offer us for the improvement of rural education in this country, particularly in the piedmont sections of the South. I have attempted, therefore, in the following pages to describe accurately the work and methods of the folk high schools and to indicate as definitely as possible how we may make application of their best features in the improvement of rural education in these sections.

THE FOLK HIGH SCHOOLS OF DENMARK.

HISTORICAL SKETCH.

The origin of the folk high schools in Denmark dates back to the middle of the last century. At that time a great awakening was taking place among the people of Denmark, the principal manifestation of which was a desire on the part of the common people for greater political and religious liberty. One of the greatest and most farsighted leaders of that day was Bishop N. T. S. Grundvig, a noted divine, poet, and historian. Bishop Grundvig was in close sympathy with the common people and understood their aspirations and needs as perhaps no other man did. He saw, however, that the people were in need of education to fit them for the proper use of the greater liberties that they sought and to enable them to avail themselves of the advantages of freer institutions. He felt that greater liberties and extended political privileges might prove injurious to the real welfare of the people unless they were taught to use them with intelligence.

Bishop Grundvig was not in sympathy, however, with the classic spirit that predominated in the education of his day; at least he did not believe that the prevailing type of education was best for the peasants of Denmark. This, he believed, placed too much emphasis on learning for learning's sake and did not sufficiently provide either for the development of the inner life of the individual or for the improvement of his efficiency as a member of society. He believed that education should enable a man to know life and to know himself, that it should reveal his abilities and strengthen them, and that it should render him more capable of performing well his daily task. It should not, however, make him dissatisfied with his work. Grundvig's idea was that—

> Education should not be rendered in such manner that it breeds despondency and contempt for work, but so that it ennobles a man's work and heightens his ability to perform it well.

In order that education of this kind might be made available for the people of Denmark, Bishop Grundvig conceived the idea of establishing a great school at some suitable point in the Kingdom. He laid his idea before the King of Denmark and won his indorsement for the plan and his promise of financial aid. A location was decided upon, land was secured, and the undertaking was begun.

Before it could be carried out, however, the King died and the project came to an end. Others had become acquainted with Grundvig's ideas, however, and were like him interested in the education of the people. Some years later, therefore, the school project was revived, though in modified form. The plan to establish one great school was abandoned, and assistance was not again sought from the King. The movement when revived became more distinctively a movement of the people and proposed the establishment of a number of schools of the type advocated by Bishop Grundvig.

The first folk high school was established in 1845 at Rodding, in the northern part of Schleswig, which was then Danish territory. In its organization and purpose it followed closely the ideas of Bishop Grundvig. A two-years' course of study was authorized. The principal subjects of instruction were Danish, history, physics, and agriculture. The aim of the school seems at the outset to have been fourfold: First, to awaken the intelligence of the people and to prepare them to obtain the greatest possible benefits from their new national constitution and to use in the most intelligent way the liberty granted by it; second, to arouse and maintain a strong spirit of patriotism, particularly in the Provinces of Schleswig and Holstein, where there was a faction disloyal to Denmark and in sympathy with Germany; third, to strengthen religious faith among the people; and fourth, to give a certain amount of vocational instruction, particularly for agricultural pursuits.

The school at Rodding for various reasons did not prosper to the extent hoped for. This was true also of Grundvig schools established elsewhere in the Kingdom during the early years following the founding of the school at Rodding. For nearly 20 years the movement did not really take hold of the people of Denmark. Then came the war with Germany in 1864, which had been long expected and which resulted in the loss of Schleswig and Holstein. This disaster humbled the pride of the nation and for the time being rendered the people almost hopeless. But with the passing of the first staggering effect of defeat the courage of the nation returned, and a movement began to regain the prestige which the nation had lost. This new movement did not have for its purpose, however, the restoration of Denmark's strength in arms nor the regaining of the territory that had been lost. It was in awakening the intelligence of the people and the development of the resources of the land that the leaders of the nation saw the promise of restored national prestige and respect. This, it was believed, could be accomplished only through education. Therefore education became the watchword of the leaders of the people and a passion with the people themselves. This new faith in education turned the attention of the people again to Bishop Grundvig's plan for popular education and led at once to a recognition of the possibilities of the folk high school and to the real beginning of the high-school movement. The school at Rodding was moved across the new German border and reestablished at Askov. Other schools were established here and there throughout the Kingdom. Students began to flock to them in numbers, and their influence grew with great rapidity.

To-day there are nearly 80 folk high schools, with a total enrollment of almost 10,000 students. Over 10 per cent of the population pass through them. The young people of the country consider it a great privilege to spend a term in one of these schools, and at a number of the schools there are many more applicants for admission each year than can be accepted.

The folk high schools are not State institutions, but are the result of private initiative, supported by a strong popular desire for education. Some of them are owned and controlled by individuals, and others by high-school societies. These have been aided by gifts and loans from the people of the communities in which the schools are located. They therefore represent the cooperative effort of the people to provide for themselves the kind of education that they need. They are inspected by the Government, however, and when they come up to certain requirements are recognized by the State department of education and receive small annual grants from the national treasury. At the present time the amount granted to each recognized school is 3,000 kroner ($810). Deserving students who are not able to bear their own expenses while attending a high school may receive assistance from a fund appropriated by the Government for that purpose. The maximum amount of assistance so given to each aided student is 25 kroner ($6.75) per month. Students pay 35 kroner ($9.45) per month in winter and 32 kroner ($8.64) per month in summer for tuition, board, and lodging. The accommodations provided are plain but comfortable.

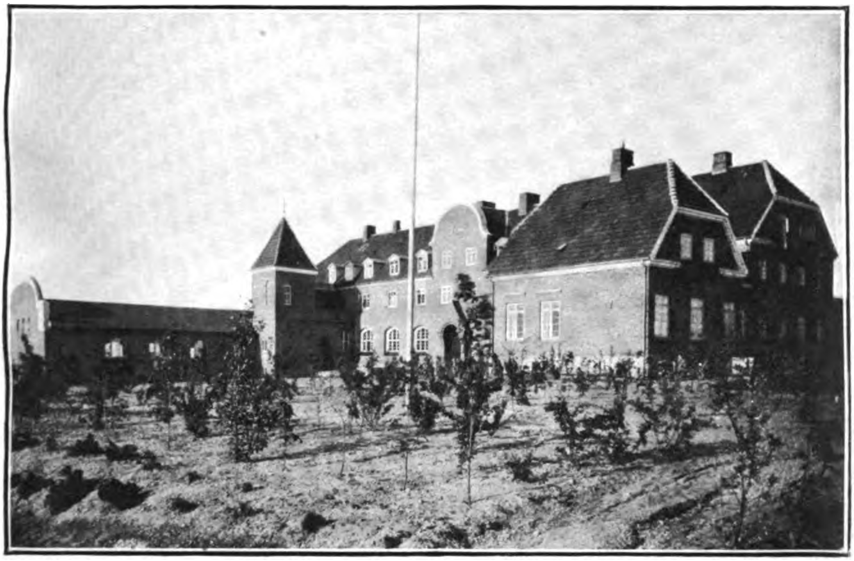
ORGANIZATION AND WORK OF THE FOLK HIGH SCHOOL.

The Danish folk high school is not a high school in the sense that we understand the term in the United States; at least, it is very unlike the public high schools of this country. The folk high schools are always located in the country and are maintained primarily for country youth. Most of their students are therefore sons and daughters of farmers, though among them are found many young men and women from other walks in life. In some schools a few from the towns and cities are enrolled. They are, as a rule, from 18 to 25 years of age. A few are younger than 18, but students under that age are usually not expected. Bishop Grundvig, in planning for the school, understood, as educators well understand to-day, that it is at this age that the intellectual life can be most easily awakened, and that it is the best of all periods to arouse ambitions, to establish ideals, and to impart to the individual a knowledge of himself and a knowledge of life. Most of the students have completed the work of the elementary school several years prior to coming to the high school.

In most folk high schools two courses of study are offered—a five months' course in winter for young men and a three months' course in the summer for young women. At the outset a two years' course was planned, but it was found that comparatively few young men and women could be spared from the farm for that length of time or could afford the expense necessary to complete a two years' course. Moreover, long continuance in school often tends to make the country youth dissatisfied with the tasks of the farm and with farm life. Such a tendency is directly contrary to the spirit and purpose of the folk high school. Its chief purpose is to open the eyes of its students to the possibilities for a richer, happier, more satisfactory life in the performance of the tasks with which they are already familiar. "We want our pupils," explained the principal of one of the larger folk high schools, "to say when they leave, 'Now I will go back to my work and more clearly see the meaning of it and more deeply feel the dignity of it.' We do not desire that they become so devoted to reading and to study as to become dissatisfied with their work." It was found by experience, therefore, that by offering short courses that come at a time when the young people of the country can best be spared from their tasks, it is possible for the folk high schools to reach a much larger number and to accomplish its aims in a much more effective way. Most of the students go back to their work after spending a term in a high school. A few return to the same school or, perhaps, after a year or two, go for a term to another high school. Some go later to Askov, the oldest and largest of the folk high schools, where more extended courses are offered. Many students of the high schools, after completing a term there, go to an agricultural school for technical instruction in agriculture and other pursuits connected with rural life.

The course of study in the folk high schools consists in part of a review of the more important elementary branches. In some schools there is also instruction in science subjects, such as chemistry, physics, and biology. History and literature, however, are the subjects to which the greatest importance is attached, and it is through these subjects that the high schools seek chiefly to accomplish their aims. In a few schools instruction in agriculture and other subjects connected with rural life is given. In their early history, agriculture was included in the course of instruction in all of the high schools. It was found, however, that it was impossible

A. FOLK HIGH SCHOOL, AAKARP, SWEDEN.



B. FOLK HIGH SCHOOL, NEAR ROSKILDE, DENMARK.

Program of subjects suggested for a course of instruction for young men.

First term:
- English language and composition.
- Hygiene and sanitation.
- Geography.
- History—leading facts of world history.
- History—American, with emphasis on biography.
- Literature—study of suitable English and American classics.
- Arithmetic and farm accounting.
- Gymnastics.

Second term:
- Chemistry—practical application of chemistry to everyday life.
- Physics—simplified course involving a practical application of physics.
- Carpentry and repairing tools and machinery.
- Soils—general study of soil formation, soil improvement, etc.
- Plants—life of common plants, plant diseases, etc.
- Farm management.
- Gymnastics.

Third term:
- Farm machinery.
- Domestic animals—breeds and breeding, feeds and feeding.
- Dairying.
- Fruits and fruit growing.
- Land measuring, draining, etc.
- Markets, transportation, cooperative associations, etc.
- Land laws, insurance, banks, etc.
- Farm buildings—planning and equipment of barns, stables, silos, etc.
- Gymnastics.

In three of the agricultural high schools of Denmark special short courses are given throughout the year for farmers and farmers' wives. The length of the courses is usually about two weeks. The writer visited one of these schools in March, 1913, and found 54 men and women pursuing the short course then given. Some of the men and women were quite old. The object of the courses is to give instruction that will be immediately helpful to farmers and their wives in dealing with the everyday problems of the farm. A large number of persons take advantage of them each year. The Government renders financial aid to deserving persons desiring to attend these courses, who are unable to bear their own expenses. Similar courses, I believe, should be undertaken in our adaptation of the folk high schools. They would render practical service to the farmers in reach of them and would aid in securing for the school their sympathy and support.

The cost of establishing and maintaining such a school as here recommended need not be great. A building or buildings would be necessary, providing classrooms, laboratories, rooms for students, and living quarters for the principal and teachers. The students, except those residing near by, should live at the school. One of the reasons why the Danish folk high schools are able to do so much for their young men and women in so short a time is that they live together like a large family and devote themselves constantly to the work of the school. There are no outside influences to interfere with their work, and they are constantly under the influence of their teachers.

The buildings should be substantial, but plain. The quarters provided for students should be comfortable of course, but need not be expensive in furnishing. Bed covering and pillows could be brought by the student from home. Plain, but wholesome, food would meet the needs of the dining room. Most of the work connected with the up-keep of the buildings could be done by the students themselves. Barns, stables, silos, and other outbuildings should be provided, such as should be found on any well-managed farm. Horses, cows, swine, and farm fowls should be supplied in sufficient numbers to meet the needs of the school population and the school farm. These would also serve the students for study purposes and should be of good breeds. There must be a school farm. This should be of sufficient size to afford opportunity for crops and pasture land. It should be an average farm in kind and quality. Such a farm would serve better than an exceptionally good one to demonstrate what may be accomplished by proper methods in farm improvement.

The folk high schools of Denmark are owned by private individuals and high-school societies, but are subsidized by the Government. This plan is not usually an acceptable one in our own country. We do not take kindly to the idea of giving State aid to private and denominational institutions. The private ownership of these schools has certain advantages there, but in this country such schools would perhaps render the greatest service if established and supported by some governmental unit of territory, such as the county or district. Our way of cooperating in education is through voluntary taxation for the support of such educational institutions as we desire. There is no reason, however, why public funds should not be supplemented by private donations. Such schools might also be supported wholly by private contributions; but there should be no attempt to run them for private gain.

The cost of attendance should be kept as low as possible. If the school is supported by taxation, no tuition fees would be required of those living within the unit of territory supporting the school. Rooms could be let to students without charge, and meals could be furnished at actual cost. The necessary expenses of a course covering three terms of five months each for young men and four months each for young women could in this way be kept so low as to bring such a course within the reach of most of the young people of a county or district.

SOME FEATURES OF THE WORK OF THE FOLK HIGH SCHOOLS THAT CAN BE ADOPTED IN STANDARD HIGH SCHOOLS.

While studying the Danish folk high schools the writer was impressed with the idea that certain features of their work could be added successfully and profitably to the work of our standard high schools.

HISTORY AND LITERATURE IN NIGHT HIGH SCHOOLS.

Many town and city high schools, in order that they may be of service to a larger number of young people, are now maintaining night schools for boys and girls of high-school age who are compelled by the necessity of self-support or of the support of relatives to be employed during the day. The introduction in night schools of history and literature as they are taught in the folk high schools would, I believe, attract many young people and be of great inspirational value to them. Such instruction could be given by the regular teachers of history and literature in the high school or by other qualified persons. This instruction should be given in the form of simple, interesting talks or stories and by means of pictures and lantern slides. Little or no preparation should be required on the part of the pupils and no tests or examinations should be given. The pupils should be encouraged, however, to do independent reading in connection with the subjects upon which lectures are given, and questions and discussions should be encouraged.

THE SHORT COURSE IN STANDARD RURAL HIGH SCHOOLS.

The short course has contributed as much to the success of the Danish folk high schools as any other feature of their organization. If the courses were longer, most of their students would be debarred from attendance. The addition of similar short courses to the work of our standard rural high schools would, I believe, enlarge their opportunity for service. Such courses, continuing four or five months in winter and arranged especially for those who can not attend for a nine months' term or have no desire to do so, would not only bring the high school in touch with many who would not otherwise be reached, but would doubtless be the means of arousing in some a desire for a more extended course of instruction.

Many of our rural high schools are not attended by the number of young people in their communities that ought to attend them. This is due largely to the fact that they are so organized as not to be within reach of many who ought to receive their instruction.

There are a few who are so situated as to be conveniently spared from home nine months out of the year for a four years' course in the county or district high school; but the sons and daughters of a large number of the taxpayers who support these schools find it impossible to attend them. It is fair, I think, to measure the success of a public high school in part by the number of young people in its territory who attend it. Its aim should be to render the greatest service possible to the largest number possible. If some can not be helped as much as others, that fact should not be accepted as an excuse for refusing to help them at all. It is after all not so important that the pupils of a high school be put through a course of traditional length in the traditional way as that they be helped through the school to find themselves, and that they have a foundation for lifelong growth and improvement.

The short courses suggested should include both inspirational and practical subjects, so that they may make the strongest possible appeal to their students. No entrance requirements should be prescribed, but a minimum age limit of 16 or 18 should be fixed, and applicants for admission should be able to read and write.

UNITED STATES BUREAU OF EDUCATION

BULLETIN, 1914, NO. 6 - - - - - - WHOLE NUMBER 577

KINDERGARTENS IN THE UNITED STATES

STATISTICS AND PRESENT PROBLEMS

DEPARTMENT OF THE INTERIOR

WASHINGTON
GOVERNMENT PRINTING OFFICE
1914

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, October 20, 1913.

SIR: The interest in the kindergarten for young children has, within the last 25 years, extended to all parts of our country. In a large proportion of our cities and towns the kindergarten has become recognized as an important part of the public-school system. Within the decade from 1902 to 1912 the number of kindergartens in the United States increased from 3,244 to 7,557, and the number of children enrolled in those reporting to this bureau increased from 205,432 to 353,546, a gain of 133 per cent in the number of kindergartens and of 72 per cent in the number of enrolled children reported. The proportion of kindergartens supported by public-school funds as a part of the public-school system has increased very rapidly in recent years, the number of public kindergartens for 1912 being 6,563, or 87 per cent of the total, and the number of children enrolled in these public kindergartens being 301,327, or 88 per cent of the total number of enrolled children reported. The total number of kindergarten teachers reported in 1912 was 8,856.

A form of education so widespread as this, and enlisting the services of so many people, deserves careful and thorough investigation by this bureau, and such investigation it hopes to be able to make some time soon. In the meantime, I recommend that the accompanying manuscript, containing kindergarten statistics for the year ended June 30, 1912, and the carefully prepared opinions of the large number of people whose experience makes their opinion on this subject valuable, be published as a bulletin of the Bureau of Education for distribution among school officials, kindergartners, and others directly interested in the subject.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

To the SECRETARY OF THE INTERIOR.

KINDERGARTENS IN THE UNITED STATES.

I. INTRODUCTION.

The survey of the status of kindergartens in the United States for the school year 1911–12 was made with the idea of gathering together quantitative facts. The question-forms, therefore, asked chiefly for returns in figures, and these will be found summarized and tabulated in the statistical section of this bulletin. Figures are significant if read back into the setting from which they were taken, and interpreted in relation to their context; they are rich material to one who makes a rich use of them, but void otherwise. The statistics given in Section II should accordingly be read with direct reference to the material presented in the other sections, particularly the opinions of superintendents, primary supervisors, and grade teachers in different cities.

It is interesting to note the numerical extension of public kindergartens and all other kinds of kindergartens at the close of June, 1912, particularly in comparison with the figures obtained by the Bureau of Education in 1902, and published in the Commissioner's Report for that year. These figures showed a total of 3,244 kindergartens, with an enrollment of 205,432 children. The census of 1900 gave a population of 3,639,583 children between 4 and 6 years of age, so that a little more than 5 per cent of the children between the ages of 4 and 6 were receiving kindergarten training in 1902. Ten years of growth resulted in 7,557 kindergartens with an enrollment of 353,546 children. The census of 1910 gives a population of 4,150,315 children between 4 and 6 years of age. In 1912, therefore, approximately 9 per cent of the children of kindergarten age were in kindergartens.

This sort of computation, however, is akin to standing a little child against the kitchen door and measuring his height every six months, and letting him triumphantly view the new scratch which shows how he is "growing." But no series of ascending scratches can record the development of the little child's mind and power. The kitchen-door measurements are obvious and tangible, but significant only when taken in connection with the evidences of increasing intelligence and power of adjustment.

In like manner, the tables of statistics presented are not an end in themselves, but a means to an end, and the purpose of the Bureau of Education is to use the numerical survey as a point of vantage from which to carry on constructive work for more kindergartens and better kindergarten training schools, better quality of teachers, and better organization of the kindergarten as a necessary part of the system of public education.

That much constructive work must be done is a truism which impresses itself with increasing strength upon those who watch the signs of the times. The steady advance of kindergartens and of the kindergarten idea which is permeating the grades is an element which requires careful consideration and handling. The child of kindergarten age is so young, so impressionable, so incapable of defending himself against the faulty words and actions and mental attitudes of teacher, that means must be devised to eliminate or at least diminish the number of faulty teachers. Standards of requirements as to personality and academic and professional training must be raised and maintained, for the surest guarantee of the extension of kindergartens is good work done by good teachers. Any other method is fictitious, or has a merely inflated value.

City superintendents, in response to inquiries as to the value of the kindergarten as part of the public-school system, make it plain that both the quantitative and qualitative success of the kindergarten is due to the excellence of the teacher. Furthermore, a particular training school is sometimes mentioned as maintaining standards which are regarded as an assurance of excellent quality of work on the part of its graduates.

While the question-form employed in conducting this survey asked chiefly for numbers, and the replies came back in terms of numbers, they were freighted in many cases with unintended revelations. From the intended, as well as from the unintended, responses may be drawn several conclusions or at least tentative inferences. A casual glance at the tables of statistics will show the facts about kindergartens in so far as those facts are uniform and capable of being reduced to columns. The location, the number of persons involved either as teachers or taught, the sums of money expended, all these items tell a tale of conformity to certain practices. They reveal the distribution of the expected factors.

It is in the nonconforming details that the unexpected factors come to light and present variations in organization and practice. These variations make some real contributions to the kindergarten situation as a whole; they testify to the flexibility of the kindergarten and to the truth that, though principles remain eternally fixed, they must be adapted to the peculiar needs of particular communities and groups of children.

In the first place the many varieties of types of kindergartens are noteworthy:

(*a*) Kindergartens that are part of the public-school system.

(*b*) Kindergartens in parochial schools (Roman Catholic and German Lutheran).

(*c*) Kindergartens supported partly by a local kindergarten association and partly by the board of education.

(*d*) Kindergartens supported entirely by donations made through a local kindergarten association.

(*e*) Kindergartens supported by a church as part of its missionary activities.

(*f*) Kindergartens maintained as part of social settlement schemes.

(*g*) Kindergartens maintained by manufacturers and mill owners as part of their social welfare work.

(*h*) Kindergartens maintained in orphanages and day nurseries.

(*i*) Kindergartens maintained in schools for physical defectives, for mental defectives, or subnormal children.

(*j*) Private kindergartens either as part of a private school or as a separate institution.

(*k*) Kindergartens in universities and colleges which give courses in science of education, and in State normal schools. In these kindergartens, which may be regarded as laboratories, the students in training have opportunities for observation and practice teaching.

In the foregoing classification may be traced the historical development of kindergartens in our country. First, there were private kindergartens, regarded as more or less of a luxury for the children of well-to-do people. Next, good men and women began to provide "charity" kindergartens for the poor and neglected children; churches, settlements, kindergarten associations, and mill owners gave and continue to give glad and generous support to such kindergartens. Third, as a direct outgrowth of the work of the kindergarten associations, there have evolved training schools for young women, established primarily to fill an immediate need, and continued since because they have become their own excuse for being. Fourth, the State legislature has been induced to pass a bill making it legal to institute public-school kindergartens. Fifth, local boards of education have partially, then entirely, taken over the care and education of little children. And sixth, the State and city normal schools have incorporated the kindergarten training schools, making them into a regularly integrated department.

Thus the path of progress has been from private philanthropy toward a broader sense of social relationships, which realizes that the State should be the true nurturing agency; that a country like America, in which the ideals of democracy obtain, should, of all countries, be the one to provide for every stage of education from babyhood up.

Thus, too, it will be seen that the nurturing, maternal aspect of education is stressed in the kindergarten, and its flexibility in the direction of teaching after a motherly fashion is evidenced by its adoption into day nurseries, orphanages, schools for physical and mental defectives, etc. In other words, wherever a child is so circumstanced that he is living a fraction of a life, the kindergarten is needed to supply some of the missing portion. No wonder then that mother-hearted women are always behind the formation of associations and clubs and boards whose aim it is to extend kindergartens.

On the other hand, the scientific aspect of kindergarten education is strongly accented in what may be termed "laboratory" kindergartens, which are maintained in connection with normal schools and colleges and universities in which the science of education is part of the curriculum. The child-study phase of psychology has turned the attention of educators increasingly to the necessity of providing opportunities for first-hand experiences with children. In "laboratory" kindergartens, students of education may observe and then do practice-teaching, and thus learn how to interpret with scientific care significant expressions on the part of the children.

Between these two well-marked functions of kindergarten education, the nurturing and the scientific, the public school kindergarten stands as a mediating element, in which it is sought to provide for the children of the people the best kind of nurturing *and* scientific care, to give them the best kind of physical, mental, social, and spiritual training. According to the special needs of the particular localities in which the kindergartens are established, emphasis is placed on one or more of the phases of the training. But perhaps the most noticeable current in public-school kindergarten practice is in the direction of blending kindergarten and primary-grade work. A careful study of the footnotes to the statistical tables makes it plain that the problem is a very real one.

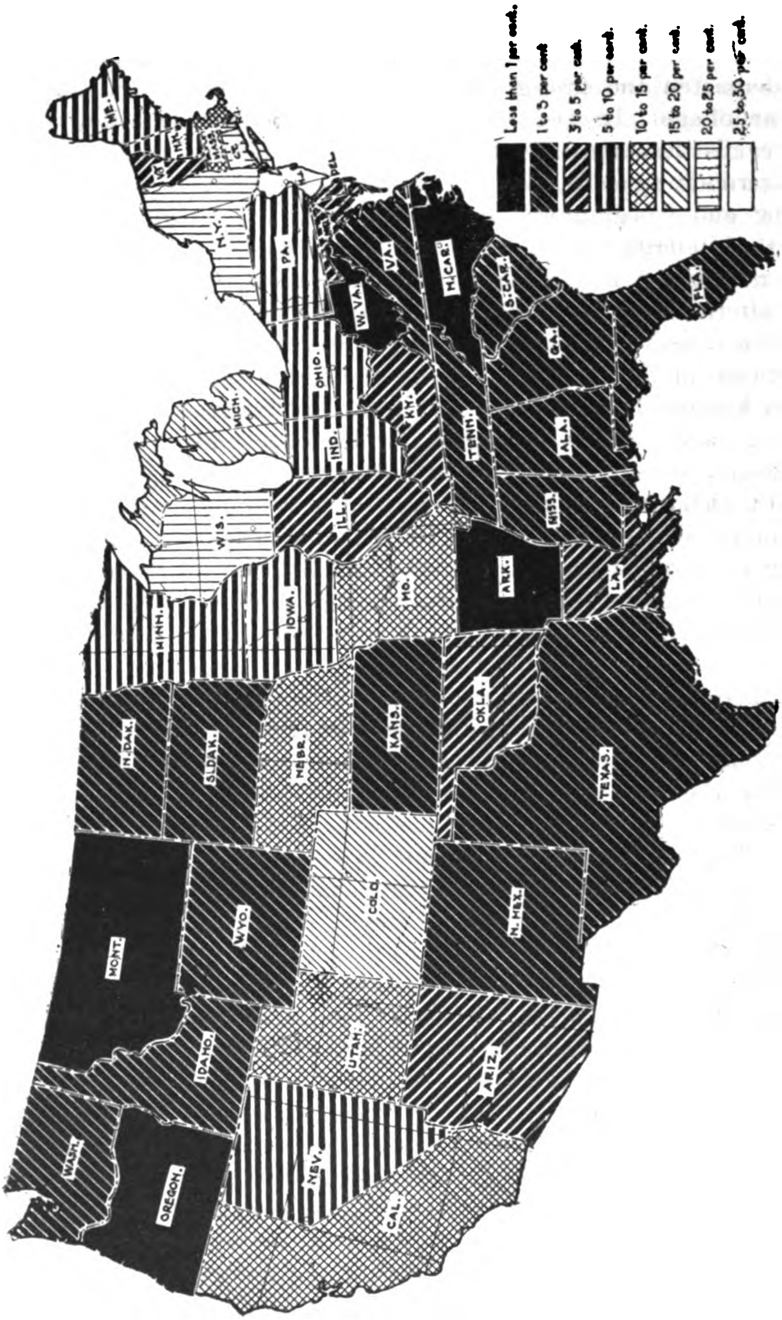
It is in the very nature of things that the public school should tend to mold whatever it adopts out of life into a uniform cast. The kindergarten offers resistance to such molding, and yet its supporters wish it to belong to the system of public education, belong in reality as well as in name. To preserve the distinctive character which glorifies the kindergarten without allowing that distinctiveness to isolate it is the difficult task.

The grades are conscious of the liberating influence which has emanated from the kindergarten; at the same time the first grade particularly calls earnestly to the kindergarten to help make adjustments which will do away with the abrupt change the child feels in passing from the free atmosphere of the one into the more circumscribed surroundings of the other. Evidence is not wanting that such adjustments are in the making. For instance, in some school communities the number of elementary grades is nine instead of the customary eight, made so by a subprimary class which is a mixture of kindergarten and first-grade work and which admits children at five years of age. In other communities the two sessions-a-day practice prevails; in some cases the same children attend both morning and afternoon sessions, having "pure" kindergarten work in the morning and "beginning" first-grade work in the afternoon; or, again, the kindergarten children are divided into two groups, A and B; in the morning A and B both attend and have pure kindergarten; in the afternoon group B only will return for first-grade work.

In some cities the kindergarten is arranged on a basis of semiannual promotions, and the children spend the first twenty weeks of the year in kindergarten and the last term in first-grade preparatory work. In some places the age at which the children must leave kindergarten is fixed at 6 or 7 but in the majority of cases it will be noticed that no rigid ruling is made, the degree of development of the individual child being the determining factor in his promotion from kindergarten to first grade. This is as it should be, although there is danger that through misplaced sentiment on the part of the teacher or mother a child may sometimes be retained in the kindergarten longer than is right and wholesome.

The increasing number of two-session-a-day kindergartens in city public-school systems is working many changes in the distribution of the kindergarten teacher's time. Where a morning session only is the rule, the teacher usually spends her afternoon visiting the homes of her children, holding mothers' meetings, and attending classes for further study and self-improvement. Her opportunities for widening and enriching her experiences are plentiful. Where the double-session rule prevails, nearly all her time is bestowed directly on the children, and she is thus enabled to give herself to twice as many little people as she could touch under the former arrangement, while her social and neighborhood work is given over more and more to medical inspectors, school nurses, mothers' clubs, and parent-teacher associations. It is still an open question as to how the gain and loss will balance up. One city that has tried two sessions as an experiment is returning to one session.

Those who are watching the trend of school practice can not yet decide whether the kindergarten teacher stands in peril of losing just that quality which has been so potent a factor in modifying school theory and school practice. That quality, not easily described, grows out of the motherly, nurturing character of the kindergartner's work. It is not "an artificial pose of motherhood," but a genuine necessary element of the teaching relationship, lacking which all



THE KINDERGARTEN IN THE UNITED STATES, 1912.

Percentage of children enrolled in kindergartens as compared with total number of children between the ages of 4 and 6.

teaching becomes flat, dull, inert. Scientific it may be, but it fails to be humanized.

There are three large organizations in the country whose members seek to preserve and extend the essential spirit of the genuine kindergarten—the International Kindergarten Union, the National Congress of Mothers, and the National Kindergarten Association.

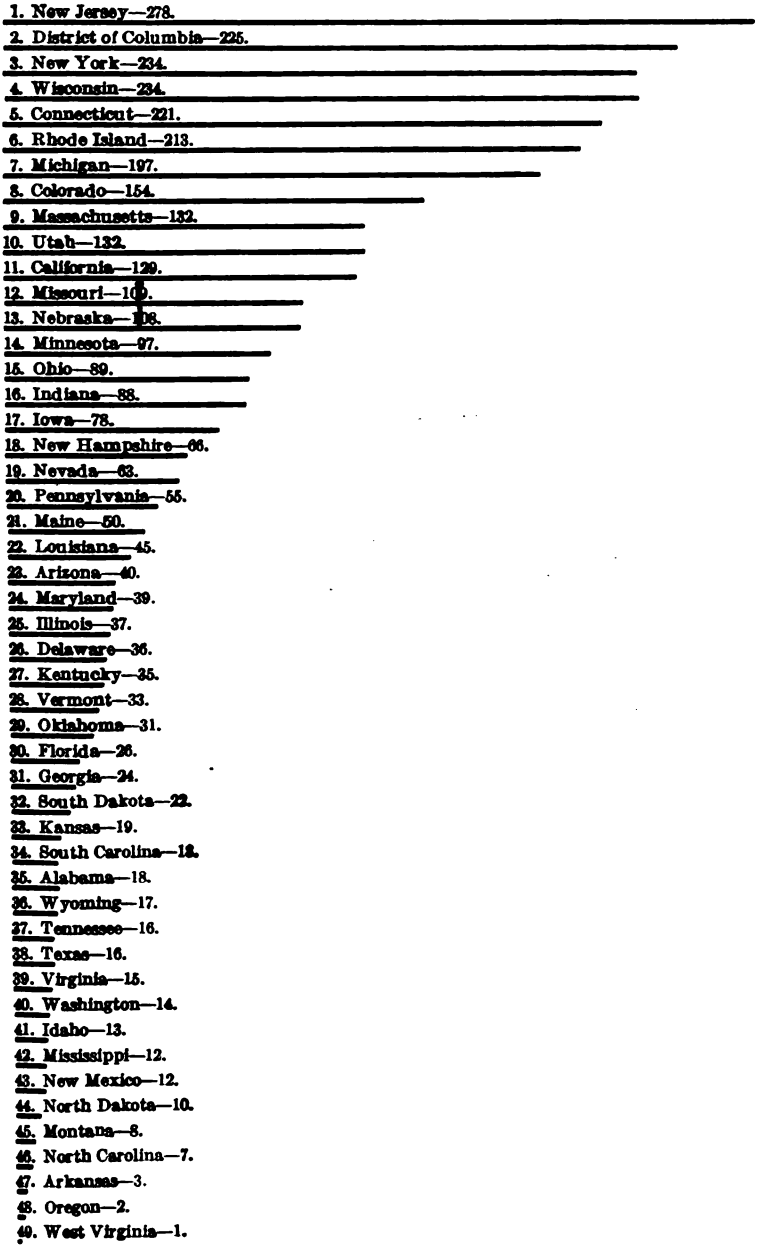
The International Kindergarten Union has for 20 years not only guarded carefully the standards of good work, but has advanced those standards toward higher and still higher levels. The International Kindergarten Union endeavors to see to it that the kindergarten training schools try to interest an increasingly better type of young womanhood in the vocation of kindergarten teaching, on the sound principle that in the the next period of growth everything will depend upon the character of the young women who go into new localities and represent the kindergarten; that these kindergartners must be fair and strong, full of the spirit of sacrifice and service, and at the same time possessed of excellent scholarship and a clear idea of their institutional obligations. In the successive conventions of the International Kindergarten Union the various new phases of child education are brought forward for consideration, and the discussions are carried on in a spirit of frankness and open-mindedness. As might be expected, the educational system of Dr. Montessori is receiving most thoughtful attention on the part of this body of educators, and experiments in comparing Froebelian with Montessori practices have been undertaken in several quarters. The prevailing opinion seems to be that some of the Italian system can be dovetailed into the kindergarten with distinct advantage to the children.

The National Congress of Mothers is another organization which is active in fostering the growth of kindergartens. In former days the kindergarten teacher never rested until she brought into being a mothers' meeting and by this means joined the hands of the home and the school. In these latter days the converse is taking place, and the mothers' club or parent-teacher association works ardently for the establishment of kindergartens, often undertaking to support one or more in a city until the board of education is sufficiently convinced of the value of kindergarten training to make it part of the public-school system. In this and in many other ways organized motherhood is doing genuinely creative educational work, and in its affiliations with kindred bodies of social-welfare workers a mighty force is generated that in due course of time will remove mountains of ignorance and negligence.

The National Kindergarten Association is the most recently formed of the three organizations. Its main purpose is to stimulate public interest and activity so that they will result in adequate provision for kindergarten training for every little child of the Nation. In other words, the association is an instrument of propaganda, and during the four years of its existence has accomplished a great deal. New lines of extension have been undertaken which are leading directly not merely to more kindergartens, but also to more efficient kindergartens.

The National Kindergarten Association is cooperating with the United States Commissioner of Education in conducting the kindergarten division of the Bureau of Education at Washington. Miss Myra M. Winchester, educational director of the association, and Miss Bessie Locke, corresponding secretary, have been appointed special collaborators of the Bureau of Education. Miss Winchester is in charge of the office in Washington and Miss Locke cooperates from the office of the association in New York.

Number of children enrolled in kindergartens per thousand of the population between 4 and 6 years of age in 1912.



II. STATISTICS.

TABLE 1.—*Summary of statistics of public kindergartens for year ended June 30, 1912.*[1]

States.	Cities having public kindergartens.	Number of kindergartens.	Number of children enrolled.	Average daily attendance.	Number of teachers.
United States	867	6,563	301,327	180,560	7,391
North Atlantic Division	311	3,108	155,908	91,010	3,558
North Central Division	454	2,780	108,187	69,118	2,851
South Atlantic Division	21	146	7,365	4,568	260
South Central Division	32	216	10,496	6,237	278
Western Division	49	313	19,371	9,627	444
North Atlantic Division:					
Maine	9	29	1,349	863	50
New Hampshire	9	30	1,086	776	48
Vermont	5	13	404	299	19
Massachusetts	35	345	17,726	11,115	564
Rhode Island	6	93	4,555	2,306	98
Connecticut	32	224	8,161	5,873	269
New York	111	1,420	18,689	40,677	1,484
New Jersey	87	542	29,064	17,740	528
Pennsylvania	17	412	14,874	11,361	498
North Central Division:					
Ohio	27	374	16,259	11,160	392
Indiana	22	137	6,041	3,704	145
Illinois	24	459	4,655	3,442	396
Michigan	119	510	22,697	13,961	545
Wisconsin	113	505	22,916	13,849	465
Minnesota	37	218	7,851	6,003	198
Iowa	52	205	7,113	5,021	190
Missouri	7	202	13,872	7,268	349
North Dakota	3	3	92	72	3
South Dakota	1	4	194	89	4
Nebraska	35	133	5,448	3,770	137
Kansas	14	30	1,049	779	27
South Atlantic Division:					
Delaware	1	1	40	24	1
Maryland	2	23	1,282	712	47
District of Columbia	1	72	3,435	2,131	137
Virginia	3	18	834	531	25
West Virginia	....	....	....	....	....
North Carolina	2	6	428	198	12
South Carolina	1	1	60	45	1
Georgia	6	19	901	654	27
Florida	5	6	385	273	10
South Central Division:					
Kentucky	5	55	3,287	1,793	65
Tennessee	1	3	196	165	4
Alabama	4	27	1,015	686	36
Mississippi	7	13	534	409	14
Louisiana	6	45	2,789	1,399	105
Texas	3	13	577	323	13
Arkansas	1	1	62	55	1
Oklahoma	5	59	2,036	1,407	40
Western Division:					
Montana	1	6	130	95	6
Wyoming	4	5	172	126	5
Colorado	8	89	5,242	2,575	87
New Mexico	1	2	30	24	1
Arizona	3	4	288	121	6
Utah	5	33	1,901	1,220	40
Nevada	2	3	189	104	4
Idaho	2	2	95	59	2
Washington	3	20	414	212	9
Oregon	....	....	....	....	....
California	20	149	10,910	5,091	284

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[1] Acknowledgments are due to the chairman of the investigation committee of the International Kindergarten Union, for her kind cooperation with the Bureau of Education, in furnishing lists of cities in which kindergartens were found during the two years' survey made by that committee. It has thus been possible to make comparisons which bring out interesting points in both the surveys.

TABLE 2.—*Summary of statistics of kindergartens other than public for year ended June 30, 1912.*

States.	Cities having kindergartens other than public.	Number of kindergartens.	Number of children enrolled.	Average daily attendance.	Number of teachers.
United States	412	994	52,219	31,460	1,465
North Atlantic Division	168	436	22,919	14,343	628
North Central Division	101	268	16,037	8,877	368
South Atlantic Division	52	122	5,818	3,664	199
South Central Division	56	99	4,056	2,615	128
Western Division	35	69	3,391	1,961	88
North Atlantic Division:					
Maine	6	7	247	131	12
New Hampshire	4	4	152	122	6
Vermont	2	3	108	47	5
Massachusetts	29	41	1,485	1,080	51
Rhode Island	8	10	420	324	18
Connecticut	16	48	2,395	1,836	87
New York	37	198	13,472	7,718	356
New Jersey	26	44	1,348	958	51
Pennsylvania	40	81	3,292	2,127	96
North Central Division:					
Ohio	15	41	2,157	1,551	56
Indiana	7	47	4,191	1,626	55
Illinois	15	74	4,182	2,317	106
Michigan	11	17	1,116	764	27
Wisconsin	11	14	623	366	15
Minnesota	4	10	766	435	17
Iowa	7	10	400	271	12
Missouri	9	31	1,532	891	45
North Dakota	3	5	171	129	8
South Dakota	3	3	379	175	8
Nebraska	5	5	136	106	8
Kansas	11	11	384	246	13
South Atlantic Division:					
Delaware	1	9	277	193	12
Maryland	5	15	935	590	28
District of Columbia	1	6	206	125	10
Virginia	5	9	540	358	23
West Virginia	3	3	101	68	4
North Carolina	8	9	301	211	14
South Carolina	11	24	1,161	758	33
Georgia	15	37	1,774	1,172	54
Florida	3	10	521	189	21
South Central Division:					
Kentucky	6	8	224	141	9
Tennessee	7	17	693	489	21
Alabama	9	11	692	354	18
Mississippi	8	13	467	334	16
Louisiana	3	7	447	214	11
Texas	14	32	1,145	837	42
Arkansas	4	6	207	116	6
Oklahoma	5	5	181	130	5
Western Division:					
Montana	1	1	15	13	1
Wyoming	....	....	....	....	....
Colorado	3	3	81	53	3
New Mexico	3	4	149	125	4
Arizona	2	2	65	54	2
Utah	2	3	214	133	5
Nevada	1	1	35	28	1
Idaho	3	3	93	69	3
Washington	5	9	320	168	10
Oregon	4	4	84	65	4
California	11	39	2,335	1,253	55

ERRATA FOR PAGE 16.

New York State: Number of children enrolled should be 78,689.

Illinois: Number of kindergartens 267, number enrolled 15,298; average daily attendance 13,456.

Totals for North Central Division should therefore read, left to right: 454, 2588, 118,8[illegible]0, 79,132, 2851; and totals for United States: 867, 6571, 311,070, 190,574, 7391.

This alters totals cited on pages 5 and 7.

TABLE 3.—*Cities having a supervisor of public kindergartens—Salary.*

Cities and States.	Salary.	Cities and States.	Salary.
Birmingham, Ala	$1,380	Eveleth, Minn	$950
Mobile, Ala	600	Gilbert, Minn	1,100
Los Angeles, Cal	2,400	Minneapolis, Minn	[3] 2,200
Pasadena, Cal	1,200	Natchez, Miss	[4] 675
Pomona, Cal	1,200	Kansas City, Mo	1,600
Sacramento, Cal	1,200	St. Louis, Mo	2,850
Santa Barbara, Cal	1,000	Omaha Nebr	1,550
Denver, Colo	1,600	South Omaha, Nebr	903
Hartford, Conn	800	Concord, N. H	700
New Britain, Conn	1,500	Portsmouth, N. H	700
New Haven, Conn	1,100	Atlantic City, N. J	[1] 1,600
South Manchester, Conn	750	Camden, N. J	[1] 1,800
Stamford, Conn	940	Jersey City, N. J	[1] 2,500
Washington, D. C	1,750	Kearney, N. J	[1] 1,700
Columbus, Ga	500	Newark, N. J	2,200
Columbia, Ill	1,250	Perth Amboy, N. J	710
La Grange, Ill	950	Rutherford, N. J	1,000
Moline, Ill	810	Trenton, N. J	1,350
Peoria, Ill	1,300	Albany, N. Y	1,000
Converse, Ind	[1] 1,000	Buffalo, N. Y	1,600
Evansville, Ind	1,800	Gloversville, N. Y	675
Fort Wayne, Ind	[1] 1,800	Ithaca, N. Y	[1] 1,000
Michigan City, Ind	720	New Patz, N. Y	[2] 1,000
Shelbyville, Ind	585	New York, N. Y	3,500
Terre Haute, Ind	693	Schenectady, N. Y	1,400
Des Moines, Iowa	1,450	Syracuse, N. Y	1,350
Dubuque, Iowa	850	Troy, N. Y	900
Mason City, Iowa	697	Utica, N. Y	750
Waterloo, Iowa	540	Yonkers, N. Y	1,240
Neodesha, Kans	765	Cincinnati, Ohio	1,800
Lexington, Ky	600	Cleveland, Ohio	[1] 2,640
Louisville, Ky	1,100	Dayton, Ohio	1,200
New Orleans, La	2,400	Mansfield, Ohio	450
Bangor, Me	675	Springfield, Ohio	900
Boston, Mass	1,860	Oklahoma City, Okla	1,000
Cambridge, Mass	1,350	Guthrie, Okla	675
Fitchburg, Mass	800	Philadelphia, Pa	2,500
Newton, Mass	1,000	Pittsburgh, Pa	2,500
Springfield, Mass	[1] 2,700	Scranton, Pa	1,000
Worcester, Mass	1,300	Providence, R. I	1,000
Detroit, Mich	2,100	Knoxville, Tenn	700
Grand Rapids, Mich	1,300	Forth Worth, Tex	[4] 1,000
Ironwood, Mich	650	Salt Lake City, Utah	[1] 2,250
Kalamazoo, Mich	900	Richmond, Va	[1] 2,000
Muskegon, Mich	900	Antigo, Wis	675
Ypsilanti, Mich	[2] 1,200	Kenosha, Wis	845
Chisholm, Minn	800	La Crosse, Wis	775

[1] Supervisor of kindergartens and primary grades.
[2] Principal of kindergarten department in normal school.
[3] Also assistant superintendent.
[4] Also director of one kindergarten.

TABLE 4.—*Kindergartens (other than public) having a supervisor.*

City and State.	Name of kindergarten (or supporting body).	Salary.
Huntsville, Ala	Huntsville Kindergarten Association	$810
Los Angeles, Cal	Neighborhood Settlement	(1)
San Francisco, Cal	Golden Gate Kindergarten Association	1,200
Atlanta, Ga	Sheltering Arms Association	600
Columbus, Ga	Free Kindergarten Association[2]	780
La Grange, Ga	Mill Owners—P. E. Church	(1)
Savannah, Ga	Kate Baldwin Free Kindergarten Association	1,800
Chicago, Ill	Armour Institute	1,000
Riverside, Ill	Kindergarten Extension Association	1,300
Muncie, Ind	Muncie Free Kindergarten Association	810
Saginaw, Mich	Saginaw Free Kindergarten Association	540
Brooklyn, N. Y	Brooklyn Free Kindergarten Society	1,800
New York, N. Y	Children's Aid Society	960
Do	New York Kindergarten Association	2,500
Do	St. Bartholomews	1,250
Cleveland, Ohio	Cleveland Day Nursery and Kindergarten Association	1,500
Reading, Pa	Reading Free Kindergarten Association	585
Nashville, Tenn	Methodist Training School	720
Dallas, Tex	Dallas Free Kindergarten Association	855
Houston, Tex	Houston Kindergarten Association	900
San Antonio, Tex	San Antonio Kindergarten Association	590
Norfolk, Va	Norfolk Kindergarten Association	1,000
Milwaukee, Wis	Milwaukee Mission Kindergarten and Neighborhood Association	1,000

[1] Supervisor supervises public school kindergartens and training school kindergartens. [2] Services given.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912.*[1]

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers. Number.	Kindergarten teachers. Maximum salary.	Kindergarten teachers. Minimum salary.	Assistant kindergarten teachers. Maximum salary.	Assistant kindergarten teachers. Minimum salary.	One or two sessions a day.[1]	Same teacher in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
ALABAMA.																	
Birmingham	132,685	5,705	[2] 18	715	177	475	6	7	19	$900	$600	......	......	1	....	1903	High-school graduation; 2 years' kindergarten training.
Enterprise	2,322	100	1	50	177	[3] 35	([4])	([4])	[3] 2	([4])	([4])	......	......	1	....	([4])	([4])
Gadsden	10,557	454	1	35	178	23	5	7	1	495	......	......	......	1	....	1911	Graduation from recognized kindergarten training school.
Mobile	51,521	2,215	7	215	162	[3] 153	4	6	14	480	400	......	[5] $120	1	....	1902	Graduation from approved kindergarten training school.
ARIZONA.																	
Bisbee	9,019	388	1	75	180	42	4	6	1	810	......	......	......	2	Yes...	1906	Graduation from State normal; special work.
Flagstaff	1,633	70	1	32	195	24	4	[6] 6	1	700	......	......	......	1	....	1905	Examination for kindergarten graduation.
Prescott	5,092	219	2	181	200	55	4	[6] 6	4	850	750	$250	250	1	....	1900	Graduation from normal school or equivalent.
ARKANSAS.																	
Bentonville	1,956	84	1	62	175	55	4½	6	1	450	270	......	......	2	Yes...	([4])	([4]).

[1] It must be borne in mind that wherever two-sessions-a-day kindergartens are reported with a different group of children attending each session the total number of kindergartens in that city is reckoned according to the number of sessions, not according to the number of buildings or rooms. This plan of reckoning is based on the argument that the ordinary unit of kindergarten administration is one session, one group of children, one room, one set of teachers. Therefore the addition of a second session and a second group of children, even though the same room is used and charge given to the same teacher or teachers, constitutes an additional kindergarten.

[2] Supported by association up to July.

[3] Estimated.

[4] No data.

[5] For musician.

[6] Not fixed; depends on development.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teacher in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
CALIFORNIA.																	
Corning	972	41	1	37	161	19	4½	6	1	$600	$600			1		(1)	Kindergarten and primary certificate.
Coronado	1,477	63	1	54	194	28	4	6	2	960	720			1		1901	Graduation from training school approved by State board.
Fresno	24,892	1,070	1	89	180	56	4	6	2	700	600	$600	$600	1		1900	State requirements.
Long Beach	17,809	766	8	572	171	245	4	(2)	15	750	700	600	550	1	Yes[3]	1909	Graduation from 2 years' kindergarten course.
Los Angeles	319,198	13,725	74	6,276	184	2,891	3½	6	148	960	720	840	600	1	Yes[3]	1878	Graduation from high school and 2 years' kindergarten training school.
Oakland	150,174	6,457	3	203	191	92	5	(2)	3	1,200	780			1		1892	Same as elementary teacher; kindergarten training.
Oxnard	2,555	110	1	43	195	21	4½	6	1	850	850			1		1905	Credits approved by State board.
Pasadena	30,291	1,302	12	524	170	317	4½	6	27	840	780	720	660	1	Yes[3]	1901	Graduation from California accredited normal school.
Pomona	10,207	439	6	387	178	201	4	6	13	780	720	660	600	1		1890	Do.
Redlands	10,449	449	3	[4] 75	180	52	5	6	3	780	600			1		1906	Graduation from California kindergarten training school.
Redondo Beach	2,935	126	1	68	97	38	4	6	1	375				1		1912	Graduation from normal school.
Riverside	15,212	654	2	125	180	68	5	(2)	4	744		480		1		1895	Certificate under State law.
Sacramento	44,696	1,922	12	860	185	289	4	6	23	840	840	660	660	1		1895	Two years' training; 1 year of teaching.
San Diego	39,578	1,701	6	805	189	320	5	6	17	804	804	360	360	1		1891	State requirements for director; none for assistants.
San Francisco	416,912	18,027	2	70	209	25	4	6	1	840				2	Yes	1909	Certificate on credits prescribed.
Santa Ana	8,429	362	4	170	175	124	4	6	8	720	540	360	225	1		1902	Graduation from accredited school.
Santa Barbara	11,659	501	6	280	190	138	4	6	8	750		650		1		1895	(1)
South Pasadena	4,649	200	3	138	175	100	4	6	4	675	390		300	1		1911	Kindergarten graduation certificate.
Ventura	2,945	126	2	92	196	45	4	6	2	762				1		1905-6	Kindergarten normal training.
Woodland	3,187	136	1	42	183	22	4	6	1	700	700			1		1892	Graduation from approved kindergarten training school.

COLORADO.																	
Buena Vista	1,041	44	1	30	180	25	5	[4]6	1	675	......	......	......	2	Yes...	1898	Special training.
Colorado Springs	29,078	1,250	7	400	190	210	5	(1)	8	800	600	600	500	1	....	(1)	Graduation from kindergarten training school.
Denver	213,381	9,175	68	4,095	182	1,968	4	[4]6	66	960	744	672	600	2	Yes...	1893	Graduation from high school and normal school.
Fort Collins	8,210	353	4	199	175	[4]149	4	6	4	900	675	750	600	2	Yes...	(1)	Graduation from training school.
Grand Junction	7,754	333	2	108	190	66	5	6	2	807	712	712	617	2	Yes...	1902	Graduation from kindergarten training school.
La Junta	4,154	178	2	75	178	50	4	6	2	675	450	630	450	2	Yes...	1900	Normal school diploma.
Pueblo	44,395	1,908	3	234	190	43	5	(2)	3	850	550	300	100	1	....	1906	Graduation from training school.
Telluride	1,756	75	2	101	181	64	4	6	1	807	807	......	......	2	Yes...	1903	Graduation from normal; special kindergarten training.
CONNECTICUT.																	
Bridgeport	102,054	4,388	4	377	184	224	3½	5	4	750	500	......	......	2	Yes...	1908	Graduation from high school; 2 years' successful kindergarten experience.
Bristol	13,502	580	8	353	178	194	4	6	5	525	450	475	450	2	Yes...	1892	(1)
Darien	3,946	170	2	50	200	37	5	6	2	600	450	......	......	2	Yes...	1908	Graduation from approved kindergarten training school.
East Haven	1,795	77	1	46	178	22	4	(2)	1	(5)	......	......	......	2	Yes...	1911	Two years' course in kindergarten training school.
East Windsor	3,362	144	1	35	180	28	4	(2)	1	407	370	......	......	2	Yes...	1910	(1)
Essex	2,745	118	2	45	180	39	4	(2)	2	475	......	......	......	1	....	(1)	Normal training or registered school.
Greenwich	16,463	707	8	205	188	113	4	[2]6	4	750	500	......	......	[3]1	Yes...	1905	Graduation from kindergarten training school.
Groton Borough	6,495	279	1	73	180	42	4	7	2	450	270	......	......	1	....	1898	Normal school diploma.
Hartford	98,915	4,253	16	[4]640	(1)	[4]420	(1)	(1)	55	(1)	......	......	......	1	....	1892	Normal or special training.
Jewett City	3,023	130	1	30	192	21	4	6	1	480	......	......	......	2	Yes...	1910	(1)
Manchester	13,641	586	2	40	185	[4]30	4½	(1)	1	432	......	......	......	2	....	1911	Graduation from normal school.
Meriden	32,066	1,378	11	500	183	[4]375	4	(2)	13	720	480	......	......	[3]1	Yes...	1903	High school graduation; normal school graduation.
Milford	4,366	187	1	58	182	30	4½	6	1	475	351	114	114	2	Yes...	1900	Graduation from kindergarten preparatory school.
Naugatuck	12,722	547	6	279	188	159	3	6	5	600	400	600	400	1	....	1899	High school diploma; training school diploma.
New Britain	43,916	1,888	20	687	173	474	5	6	15	840	540	840	540	2	Yes...	1896	Normal diploma.
New Haven	133,605	5,745	50	1,950	195	[4]1,461	4	6	44	750	450	700	450	2	Yes...	1890	High school graduation; kindergarten training school graduation.
New London	19,659	846	5	260	180	35	5	6	10	500	500	350	350	1	....	1889	Normal school training.
Norfolk	1,541	66	1	28	181	16	4	6	1	550	450	......	......	1	....	1901	Graduation from kindergarten training school.
Norwalk	24,211	1,041	6	[4]300	189	[4]225	3½	(2)	14	290	......	285	......	2	Yes...	1912	Graduation from kindergarten school.
Norwich	28,219	1,213	10	(1)	180	(1)	3	6	14	650	450	500	250	1	....	1892	Normal kindergarten course.
Old Lyme	1,181	50	1	17	180	11	4	6	1	462	400	......	......	1	....	[6]1906	Normal kindergarten training.
Plainville	2,882	123	1	64	186	27	4	6	2	500	440	200	180	1	....	1896	Normal school certificate.
Plymouth (Terryville)	5,021	215	3	145	183	90	4	6	3	456	399	190	95	2	Yes...	[6]1893	Graduation from normal school.

[1] No data.
[2] Not fixed; depends on development.
[3] In some cases two sessions.
[4] Estimated.
[5] Salary same as grade teachers.
[6] Approximate.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teacher in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
CALIFORNIA.																	
Corning	972	41	1	37	161	19	4½	6	1	$600	$600	......	......	1	....	(¹)	Kindergarten and primary certificate.
Coronado	1,477	63	1	54	194	28	4	6	2	960	720	......	......	1	....	1901	Graduation from training school approved by State board.
Fresno	24,892	1,070	1	89	180	56	4	6	2	700	600	$600	$600	1	....	1900	State requirements.
Long Beach	17,809	766	8	572	171	245	4	(²)	15	750	700	600	550	1	Yes³..	1909	Graduation from 2 years' kindergarten course.
Los Angeles	319,198	13,725	74	6,276	184	2,891	3½	6	148	960	720	840	600	1	Yes³..	1878	Graduation from high school and 2 years' kindergarten training school.
Oakland	150,174	6,457	3	203	191	92	5	(²)	3	1,200	780	......	......	1	....	1892	Same as elementary teacher; kindergarten training.
Oxnard	2,555	110	1	43	195	21	4½	6	1	850	850	......	......	1	....	1905	Credits approved by State board.
Pasadena	30,291	1,302	12	524	170	317	4½	6	27	840	780	720	660	1	Yes³..	1901	Graduation from California accredited normal school.
Pomona	10,207	439	6	387	178	201	4	6	13	780	720	660	600	1	....	1890	Do.
Redlands	10,449	449	3	175	180	52	5	6	3	780	600	......	......	1	....	1906	Graduation from California kindergarten training school.
Redondo Beach	2,935	126	1	68	97	38	4	6	1	375	......	......	......	1	....	1912	Graduation from normal school.
Riverside	15,212	654	2	125	180	68	5	(²)	4	744	......	480	......	1	....	1895	Certificate under State law.
Sacramento	44,696	1,922	12	860	185	289	4	6	23	840	840	660	660	1	....	1895	Two years' training; 1 year of teaching.
San Diego	39,578	1,701	6	805	189	320	5	6	17	804	804	360	360	1	....	1891	State requirements for director; none for assistants.
San Francisco	416,912	18,027	2	70	209	25	4	6	1	840	......	......	......	2	Yes...	1909	Certificate on credits prescribed.
Santa Ana	8,429	362	4	170	175	124	4	6	8	720	540	360	225	1	....	1902	Graduation from accredited school.
Santa Barbara	11,659	501	6	280	190	138	4	6	8	750	......	650	......	1	....	1895	(¹)
South Pasadena	4,649	200	3	138	175	100	4	6	4	675	390	......	300	1	....	1911	Kindergarten graduation certificate.
Ventura	2,945	126	2	92	196	45	4	6	2	762	......	......	......	1	....	1905-6	Kindergarten normal training.
Woodland	3,187	136	1	42	183	22	4	6	1	700	700	......	......	1	....	1892	Graduation from approved kindergarten training school.

COLORADO.																
Buena Vista	1,041	44	1	30	180	25	5	[4]6	1	675	......	......	......	2	Yes...	1898	Special training.
Colorado Springs	29,078	1,250	7	400	190	210	5	(1)	8	800	600	600	500	1	....	(1)	Graduation from kindergarten training school.
Denver	213,381	9,175	68	4,095	182	1,968	4	[4]6	66	960	744	672	600	2	Yes...	1893	Graduation from high school and normal school.
Fort Collins	8,210	353	4	199	175	[4]149	4	6	4	900	675	750	600	2	Yes...	(1)	Graduation from training school.
Grand Junction	7,754	333	2	108	190	66	5	6	2	807	712	712	617	2	Yes...	1902	Graduation from kindergarten training school.
La Junta	4,154	178	2	75	178	50	4	6	2	675	450	630	450	2	Yes...	1900	Normal school diploma.
Pueblo	44,395	1,908	3	234	190	43	5	(2)	3	850	550	300	100	1	....	1906	Graduation from training school.
Telluride	1,756	75	2	101	181	64	4	6	1	807	807	......	......	2	Yes...	1903	Graduation from normal; special kindergarten training.
CONNECTICUT.																
Bridgeport	102,054	4,388	4	377	184	224	3½	5	4	750	500	......	......	2	Yes...	1908	Graduation from high school; 2 years' successful kindergarten experience.
Bristol	13,502	580	8	353	178	194	4	6	5	525	450	475	450	2	Yes...	1892	(1)
Darien	3,946	170	2	50	200	37	5	6	2	600	450	......	......	2	Yes...	1908	Graduation from approved kindergarten training school.
East Haven	1,795	77	1	46	178	22	4	(2)	1	(5)	......	......	......	2	Yes...	1911	Two years' course in kindergarten training school.
East Windsor	3,362	144	1	35	180	28	4	(2)	1	407	370	......	......	2	Yes...	1910	(1)
Essex	2,745	118	2	45	180	39	4	(2)	2	475	......	......	......	1	....	(1)	Normal training or registered school.
Greenwich	16,463	707	8	205	188	113	4	[2]6	4	750	500	......	......	[3]1	Yes...	1905	Graduation from kindergarten training school.
Groton Borough	6,495	279	1	73	180	42	4	7	2	450	270	......	......	1	....	1898	Normal school diploma.
Hartford	98,915	4,253	16	[4]640	(1)	[4]420	(1)	(1)	55	(1)	......	......	......	1	....	1892	Normal or special training.
Jewett City	3,023	130	1	30	192	21	4	6	1	480	......	......	......	2	Yes...	1910	(1)
Manchester	13,641	586	2	40	185	[4]30	4½	(1)	1	432	......	......	......	2	....	1911	Graduation from normal school.
Meriden	32,066	1,378	11	500	183	[4]375	4	(2)	13	720	480	......	......	[3]1	Yes...	1903	High school graduation; normal school graduation.
Milford	4,366	187	1	58	182	30	4½	6	1	475	351	114	114	2	Yes...	1900	Graduation from kindergarten preparatory school.
Naugatuck	12,722	547	6	279	188	159	3	6	5	600	400	600	400	1	....	1899	High school diploma; training school diploma.
New Britain	43,916	1,888	20	687	173	474	5	6	15	840	540	840	540	2	Yes...	1896	Normal diploma.
New Haven	133,605	5,745	50	1,950	195	[4]1,461	4	6	44	750	450	700	450	2	Yes...	1890	High school graduation; kindergarten training school graduation.
New London	19,659	846	5	260	180	35	5	6	10	500	500	350	350	1	....	1889	Normal school training.
Norfolk	1,541	66	1	28	181	16	4	6	1	550	450	......	......	1	....	1901	Graduation from kindergarten training school.
Norwalk	24,211	1,041	6	[4]300	189	[4]225	3½	(2)	14	290	......	285	......	2	Yes...	1912	Graduation from kindergarten school.
Norwich	28,219	1,213	10	(1)	180	(1)	3	6	14	650	450	500	250	1	....	1892	Normal kindergarten course.
Old Lyme	1,181	50	1	17	180	11	4	6	1	462	400	......	......	1	....	[6]1906	Normal kindergarten training.
Plainville	2,882	123	1	64	186	27	4	6	2	500	440	200	180	1	....	1896	Normal school certificate.
Plymouth (Terryville)	5,021	215	3	145	183	90	4	6	3	456	399	190	95	2	Yes...	[6]1893	Graduation from normal school.

[1] No data.
[2] Not fixed; depends on development.
[3] In some cases two sessions.
[4] Estimated.
[5] Salary same as grade teachers.
[6] Approximate.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teacher in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
CONNECTICUT—contd.																	
Putnam	7,280	313	1	52	106	40	4	7	2	$494	$494	$304	$304	1	....	1902	Kindergarten normal graduation.
South Manchester	7,000	301	4	254	186	[1] 190	4	6	5	650	400	......	......	[2] 1	Yes...	1890	Graduation from normal training school.
Stafford	5,233	225	2	75	180	50	3½	6	2	432	252	252	252	2	Yes...	1901	Special training.
Stamford	28,836	1,239	14	[1] 744	189	478	4	(3)	22	900	480	350	260	2	Yes...	(4)	Approved normal.
Stonington	9,154	393	7	186	185	[1] 148	5	6	4	468	390	......	......	2	Yes...	(4)	Two years' training.
Wallingford	11,155	479	8	254	180	128	4	5½	4	575	575	575	575	[2] 1	Yes...	(4)	Graduation from training school.
Waterbury	73,141	3,145	23	878	196	[1] 657	4	5½	24	800	450	700	450	2	Yes...	1902	High school graduation; normal school graduation.
West Haven	8,543	367	2	50	190	46	5	6	1	600	400	......	......	2	Yes...	1908	High school and kindergarten graduation
Winsted	7,754	333	2	106	183	64	5	(3)	4	650	450	300	250	1	....	(4)	Graduation from high school; graduation from kindergarten training school.
DELAWARE.																	
Newark	1,913	82	1	40	192	24	5	7	1	425	......	......	......	1	....	1910	Teacher's certificate and 1 year of practical work.
DISTRICT OF COLUMBIA.																	
Washington	331,369	14,235	72	3,435	179	2,131	5	6	137	900	650	600	500	1	....	1898	High school graduation or equivalent; normal graduation.
FLORIDA.																	
Daytona	3,082	132	1	56	160	29	4	6	2	480	320	......	......	1	....	1907	High school graduation, kindergarten diploma.
Miami	5,471	235	2	90	159	76	4	6	2	480	320	320	240	1	....	1909	Graduation from kindergarten training school.
St. Petersburg	4,127	177	1	140	160	95	4	6	3	800	500	600	400	2	Yes...	1904	Normal graduation.
Tallahassee	5,018	215	1	45	159	[6] 33	3	6	1	400	......	......	......	1	....	(4)	Diploma.
West Palm Beach	1,743	74	1	54	160	40	4	[3] 6	2	720	560	......	......	1	....	1906	Graduation from kindergarten training school; experience.

GEORGIA.																	
Athens	14,913	641	2	95	178	36	4	6	2	540	420			1		[5] 1905	Training in approved school.
Augusta	41,040	1,764	6	300	180	250	5	6	12	720	480	540	360	2	Yes	1891	High school diploma, or normal and certificate of training school.
Columbus	20,554	883	8	393	175	[5] 294	4	6	10	400	250			1		1905	Graduation from high school; 2 years' kindergarten training.
La Grange	5,587	240	1	45	175	26	4	7	1	540				1		1911	Graduation from kindergarten normal.
Sandersville	2,641	113	1	28	164	23	4	7	1	360				1		(4)	Normal school diploma.
West Point	1,906	81	1	40	180	25	3	7	1	675				1		1900	Normal training.
IDAHO.																	
Lewiston	6,043	259	1	70	174	38	5	6	1	765				(4)		(4)	(4)
Mountainhome	1,411	60	1	25	180	21	5	7	1	765	720			1		1910	College education or equivalent.
ILLINOIS.																	
Benld	1,912	82	1	110	178	73	6	7	1	450	450			2	Yes	(4)	Second grade county certificate.
Berwyn	5,841	251	4	160	196	140	4	6	8	500	350	350		1		1897	Graduation from kindergarten college.
Chicago	2,185,283	93,967	192	11,825	190	11,237	4	6	292	1,175	650			2	Yes	1896	Graduation from high school; graduation from kindergarten normal.
Chicago Heights	14,525	624	1	100	197	43	6	(3)	2	750	500	500	500	2	Yes	1911	Same as elementary teacher; kindergarten training.
Columbia	2,076	89	1	44	181	39	5½	7	1	540				1		(4)	Best available.
Evanston	24,978	1,074															
District 75			6	334	190	167	5	6	12	600	450	400	350	1		1892	High school diploma; kindergarten training.
District 76			2	149	190	101	4	6	4	800	600	400	400	2	Yes	1895	Graduation from kindergarten college.
Glencoe	1,899	81	1	73	186	35	4	6	2	675		550		1		1897	Graduation from high school; graduation from kindergarten training school.
Jacksonville	15,326	659	1	60	180	35	4	6	1	585				1		(4)	Graduation from kindergarten college.
Kenilworth	881	37	1	[5] 42	179	24	4	6	1	500	500			1		[5] 1895	(4)
La Grange	5,282	227	5	293	190	200	4	6	6	700	500	400	250	1		1905	Graduation from kindergarten training school.
Lake Forest	3,349	144	2	80	185	60	4	6	3	925	500			2	Yes	1902	Graduation from high school, kindergarten normal.
Moline	24,199	1,040	18	467	177	309	[5] 5	[5] 6	18	675	450	360	315	2	Yes	1903	Kindergarten school graduation.
Morgan Park	3,694	168	2	103	196	56	4	[2] 6	2	800	600			2	Yes	1891	Graduation from approved kindergarten training school.
Peoria	66,950	2,878	15	735	188	427	4	6	22	850	450	750	450	1		1897	Graduation from high school; 2 years' training and practice.
Prophetstown	1,083	46	1	44	195	39	6	(3)	1	675				1		(4)	(4)
Quincy	36,587	1,573	1	45	185	25	5	6	1	650				2	Yes	1907	Same as regular teachers.
River Forest	2,456	105	2	68	187	50	4½	6	3	550	400	250	200	1		1900	Graduates.
Riverside	1,702	73	1	48	183	33	4	6	3	712			427	1		(4)	Very high.
Silvis	1,163	50	1	50	180	37	5	7	1	585				2	Yes	1908	Same as primary teachers.
Toluca	2,407	103	1	134	170	93	4	(3)	2	405	405			2	Yes	(4)	(4)
West Hammond	4,948	212	2	69	196	30	4	6	2	650	650	350	350	2	Yes	1909	Graduation from kindergarten college.
Western Springs	905	38	2	35	189	28	4	6	1	800	650	800	650	2	Yes	1907	Do.
Wilmette	4,943	212	2	105	190	67	5	6	4	550	400	350	250	1		1901	Do.
Winnetka	3,168	136	2	125	186	108	4	[2] 6	3	750				1		1898	Do.

[1] Estimated.

[2] In some cases two sessions.

[3] Not fixed; depends on development.

[4] No data.

[5] Approximate.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teachers in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
INDIANA.																	
Attica	3,335	143	1	47	173	31	5	7	1	$450	......	......	......	1	....	1892	High-school graduation; kindergarten training school graduation.
Columbus	8,813	378	2	80	180	55	4	6	2	585	$405	......	......	1	....	1899	Graduation from kindergarten training school.
Converse	1,164	49	1	53	157	50	5	8	1	560	360	......	......	2	Yes...	1900	College course.
Crawfordsville	9,371	402	3	60	178	45	4	6	6	653	612	$225	$180	1	....	1911	Special kindergarten training, 2 years.
East Chicago	19,098	821	7	276	190	173	4	6	8	850	650	350	300	2	Yes...	1900	High-school graduation; kindergarten school graduation.
Evansville	69,647	2,994	12	721	185	530	5	6	12	700	465	400	400	2	Yes...	1902	Graduation from kindergarten college.
Fort Wayne	63,933	2,749	10	511	192	282	5	6	14	750	500	550	400	[1] 1	Yes...	1899	High-school graduation; kindergarten college graduation.
Gary	16,802	722	5	613	196	([2])	4	6	7	900	600	......	......	2	Yes...	1907	Two years kindergarten training following 4 years' high school.
Hammond	20,925	899	14	461	190	258	4	6	13	760	570	475	475	2	Yes...	1893	High-school graduation; kindergarten training school graduation.
Huntington	10,272	441	2	72	178	41	5	[3] 6	2	630	......	270	......	2	Yes...	1911	Graduation from 2 years' kindergarten course.
La Porte	10,525	452	3	230	190	162	5	6	4	712	598	646	522	1	....	1886	Graduation from kindergarten college or license.
Madison	6,934	298	2	58	180	41	5	6	1	630	......	......	......	2	Yes...	1908	Graduation from approved kindergarten training school.
Michigan City	19,027	818	7	299	175	197	4½	6	7	595	423	......	......	1	....	1902	Do.
Mishawaka	11,886	511	3	139	178	106	4½	6	6	675	450	......	......	1	....	1907	Two years' kindergarten training.
Richmond	22,324	959	8	405	186	208	4½	[3] 6	8	675	675	......	......	1	....	1895	High-school graduation; kindergarten college graduation.
Shelbyville	9,500	408	5	135	180	100	4	6	2	450	450	......	......	2	Yes...	1901	Two years' special preparation.
South Bend	53,684	2,308	14	[4] 700	175	600	5	6	28	648	585	630	540	1	....	1898	Graduation from kindergarten school.
Terre Haute	58,157	2,500	29	683	190	537	5	6	15	655	565	......	......	1	....	1911	License.
Valparaiso	6,987	300	1	69	87	45	4½	6	1	450	......	......	......	1	....	1892	High-school diploma or equivalent.

Vincennes	14,895	640	4	227	180	145	4	6	3	585	450	......	......	1	....	1900	Graduation from kindergarten training school.
Whiting	6,587	283	2	104	192	60	4	6	2	800	......	600	......	2	Yes...	1900	Graduation from good school.
Winchester	4,266	183	2	97	180	38	4	6	2	623	617	......	......	2	Yes...	1892	High-school graduation; graduation approved kindergarten training school.
IOWA.																	
Ackley	1,244	53	1	29	178	18	5	(²)	1	585	495	......	......	2	Yes...	1902	Special kindergarten course.
Albia	4,969	213	3	75	177	60	5	(²)	8	495	450	......	......	2	Yes...	1911	Normal graduation.
Anamosa	2,983	128	2	70	180	60	5	6	1	540	450	......	......	2	Yes...	(²)	Graduation from normal school.
Audubon	1,928	82	1	36	176	26	5	(²)	1	540	495	......	......	2	Yes...	1909	Graduation from 2 years' kindergarten course.
Blairstown	532	22	1	12	178	[4] 10	5	6	1	517	517	517	......	2	Yes...	[5] 1902	Same as State primary.
Brighton	776	33	1	18	173	12	5	(²)	1	405	405	......	......	2	Yes...	1908	Uniform county or State certificate.
Burlington	24,324	1,045	8	289	187	246	5	(³)	8	733	536	518	324	1	....	1893	Graduation from approved training school.
Carroll	3,546	152	1	50	180	[4] 45	5	7	1	540	540	......	......	2	Yes...	1912	Kindergarten training.
Cedar Falls	5,012	215	2	53	170	32	5	(²)	1	540	......	......	......	2	Yes...	1912	(²)
Cedar Rapids	32,811	1,410	9	553	177	495	5	6	9	675	495	450	225	1	....	1899	Special training.
Cincinnati	1,355	58	1	42	180	31	5	(³)	1	360	360	......	......	2	Yes...	1908	Second-grade county certificate.
College Springs	626	26	1	40	174	31	5	(³)	1	675	675	......	......	2	Yes...	1906	None.
Coon Rapids	1,084	46	1	42	178	27	5	(²)	1	540	......	......	......	(²)	....	(²)	State primary certificate.
Council Bluffs	29,292	1,259	14	557	174	[4] 417	5	7	15	675	405	405	405	1	....	(²)	High-school graduate; 2 years' special training.
Creston	6,924	297	4	[4] 48	180	[4] 38	4	7	4	540	450	225	225	1	....	1896	Graduation from approved kindergarten school.
Decorah	3,592	154	1	50	190	40	5	(²)	2	512	475	142	......	1	....	[5] 1903	Graduation from kindergarten college.
Delta	728	31	1	24	178	18	4	(³)	1	450	......	......	......	1	....	1906	(²)
Denison	3,133	134	1	78	172	43	5	(³)	1	540	450	......	......	2	Yes...	1897	Graduation from good kindergarten training school.
Des Moines	86,368	3,713	72	2,441	186	1,425	5	(³)	53	900	550	600	450	2	Yes...	1884	High-school graduate; kindergarten training, 2 years.
Dubuque	38,494	1,655	7	332	185	240	4¾	6	14	550	400	400	350	1	....	1895	Graduation from kindergarten college.
Eldora	1,995	84	1	[4] 50	175	[4] 40	5	7	1	540	495	......	......	1	....	1912	Do.
Elkader	1,181	50	2	34	180	26	5	7	1	540	540	......	......	2	Yes...	(²)	Normal training course.
Grinnell	5,036	216	6	91	177	[4] 75	5	6	3	540	450	......	......	2	Yes...	1894	Normal school; kindergarten.
Hampton	2,617	111	2	30	174	30	4¾	(³)	3	472	450	180	180	2	Yes...	1906	Kindergarten diploma.
Ida Grove	1,874	80	1	35	180	30	5	6	1	495	......	......	......	2	Yes...	(²)	Graduation from kindergarten training school.
Jefferson	2,477	106	2	60	177	47	5	(³)	2	720	......	180	180	2	Yes...	(²)	Graduation from kindergarten course.
Le Mars	4,157	178	1	38	180	25	5	(²)	1	540	450	......	......	1	....	1900	Graduation from kindergarten course.
Manchester	2,758	119	1	45	175	31	4½	6	2	450	450	......	90	2	Yes...	1900	Graduation from kindergarten training school.
Maquoketa	3,570	153	1	[4] 40	177	30	5	(²)	2	450	450	108	108	1	....	1911	Kindergarten diploma.
Marshalltown	13,374	575	7	243	174	190	5	(²)	7	665	475	......	......	2	Yes...	1890	High school or kindergarten college graduation.
Mason City	11,230	482	10	293	180	[4] 220	5	[3] 7	6	(²)	450	450	360	2	Yes...	(²)	High-school graduation; kindergarten training.
Mediapolis	858	37	1	27	180	21	5	6	1	315	......	......	......	2	Yes...	1910	County certificate.
Missouri Valley	3,187	137	2	64	177	53	4¾	(³)	1	540	472	......	......	2	Yes...	1911	Graduation from kindergarten course.

[1] In some cases two sessions. [2] No data. [3] Not fixed; depends on development. [4] Estimated. [5] Approximate.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teacher in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
IOWA—continued.																	
Monticello	2,043	87	1	38	174	34	5	(1)	1	$585	......	......	......	2	Yes...	(1)	Graduation from State normal.
Mount Pleasant	3,874	167	2	60	180	45	5	6	2	585	......	......	......	1	....	(1)	(1)
North English	848	36	1	25	[2] 180	20	5	(1)	1	450	$405	......	......	2	Yes...	(1)	High-school graduation; 2 years' training.
Odebolt	1,283	55	1	22	178	18	5	7	1	540	450	......	......	2	Yes...	1900	Graduation from approved kindergarten training school; 1 year normal training.
Oskaloosa	9,466	407	5	201	177	117	5	8	5	540	540	......	......	2	Yes...	[3] 1890	High-school graduation; kindergarten college graduation.
Panora	1,080	46	1	34	178	27	5	(1)	1	540	450	......	......	2	Yes...	1909	Normal-school training.
Pella	3,021	129	2	49	172	36	4½	6	1	495	......	......	......	2	Yes...	1902	Special training and successful experience.
Rock Rapids	2,005	86	1	34	178	24	5	6	1	540	......	......	......	2	Yes...	1906	Normal-school training.
Rockwell	700	30	1	12	177	11	5	6	1	450	......	......	......	1	....	(1)	Special primary certificate.
Rockwell City	1,528	65	2	55	178	38	4½	(1)	1	517	......	......	......	1	....	1912	High-school graduation; 2 years' kindergarten course.
Sac City	2,201	94	1	54	177	41	5	6	3	495	......	......	......	2	Yes...	1900	Graduation from kindergarten training school.
Sheldon	2,941	126	1	84	178	60	5	(4)	1	540	540	......	......	2	Yes...	1901	Do.
Shenandoah	4,976	213	1	96	180	48	5	7	2	585	360	$360	$180	2	Yes...	1908	Kindergarten training certificate.
Sioux Rapids	868	36	1	29	175	25	5	(4)	1	517	450	......	......	2	Yes...	(1)	University or special normal.
Tama	2,290	98	1	40	176	35	5	7	1	495	495	......	......	2	Yes...	(1)	2 years' special training.
Walnut	950	40	1	18	178	15	5	(1)	1	472	......	......	......	2	Yes...	1903	2 years' kindergarten training.
Wapello	1,326	56	1	26	176	18	5	7	1	495	450	......	......	1	....	1907	High-school graduation; 2 years' special training.
Washington	4,380	188	8	144	176	97	4	(4)	4	540	495	315	270	2	Yes...	(1)	Graduation from standard kindergarten course.
Waterloo	26,693	1,147	6	203	175	180	5	6	10	472	247	247	247	1	....	1899	Graduation from standard kindergarten training college.
KANSAS.																	
Atchison	16,429	706	2	62	169	38	5	7	2	585	......	360	......	2	Yes...	1910	Kindergarten training; primary training for assistant.

Caney	3,597	154	3	103	178	92	5	6	3	540	495	......	......	2	Yes...	(1)	Graduation from primary and kindergarten.
Columbus	3,064	131	2	65	170	40	5	(4)	1	495	......	......	......	2	Yes...	1911	Graduation from correspondence school.
Conway Springs	1,292	55	1	30	175	21	5	(1)	1	540	540	......	......	2	(1)....	1900	(1)
Enterprise	706	30	1	23	180	18	4	6	1	540	......	......	[5] 90	1	....	1905	State kindergarten certificate.
Howard	1,163	49	1	25	170	[2] 20	4	6	1	450	......	......	......	2	Yes...	1909	None especially.
Kansas City	83,331	3,583	6	160	180	150	5	6	6	585	450	......	......	1	....	1906	Kindergarten graduation.
Neodesha	2,872	123	4	122	178	75	4½	6	2	630	450	......	......	2	Yes...	(1)	Special State normal school training.
Newton	7,862	337	3	175	175	142	5	(1)	3	540	450	......	......	1	....	1909	Do.
Sabetha	1,768	75	1	50	185	[2] 40	5	6	1	540	540	180	180	2	Yes...	1906	State normal school training.
Salina	9,688	416	1	[2] 64	178	[2] 52	5	7	2	720	......	......	450	1	....	1910	Technical training; actual experience.
Sterling	2,133	91	2	57	180	41	5	[4] 6	1	630	......	......	......	2	Yes...	(1)	Special preparation.
Stockton	1,317	56	1	31	180	26	5	(1)	1	585	585	......	......	1	....	1910	No fixed standard.
Topeka	43,684	1,878	2	82	174	24	4	6	2	765	360	135	......	1	....	1908	Graduation from high school and kindergarten course.
KENTUCKY.																	
Covington	53,270	2,290	14	663	184	383	4	6	14	750	450	700	450	2	Yes...	1890	Diploma of kindergarten training school.
Frankfort	10,465	449	2	75	190	40	5	6	3	525	325	325	325	1	....	(1)	(1)
Lexington	35,099	1,509	6	596	200	465	4	6	16	500	250	400	250	1	....	1888	Two years' course in training.
Louisville	223,928	9,628	32	1,911	200	878	4	6	31	800	500	......	......	1	....	1903	High-school graduation; normal-school graduation.
Versailles	2,268	97	1	42	190	27	5	7	1	380	380	95	95	1	....	1906	(1)
LOUISIANA.																	
Arcadia	1,079	46	1	20	177	15	4½	7	1	495	495	......	......	1	....	1903	First-grade certificate.
Monroe	10,209	439	1	60	180	28	5½	6	1	585	......	(6)	......	1	....	1903	Graduation from training school.
Morgan City	5,477	235	1	60	174	54	5	(1)	1	540	......	......	......	2	Yes...	1910	State license.
New Orleans	339,075	14,580	40	2,532	177	1,231	4	6	98	900	600	600	600	1	....	1884	Training school for kindergartners.
Shreveport	28,015	1,204	1	89	173	51	4	6	3	720	......	540	450	1	....	1905	Graduation from State kindergarten training school.
Vidalia	1,345	57	1	28	175	20	4	6	1	540	......	......	......	1	....	1908	(1)
MAINE.																	
Augusta	13,211	568	4	137	177	80	4	6	6	525	350	525	350	1	....	1905	Kindergarten school graduation.
Bangor	24,803	1,066	8	312	177	250	4	6	17	135	101	108	90	1	....	1898	Graduation from normal school; kindergarten training school.
Biddeford	17,079	734	1	56	167	31	4	5	1	500	425	......	......	1	....	1892	Special training.
Lewiston	26,247	1,128	2	93	178	67	4	(4)	2	625	600	......	......	2	Yes...	1898	Graduation from high school; graduation from kindergarten training school.
Portland	58,571	2,518	9	553	180	307	4	6	18	600	450	600	450	1	....	1883	Graduation from kindergarten training school.
Rangeley	695	29	1	50	180	[2] 38	5	(1)	1	400	400	......	......	2	Yes...	1895	Normal training.
Saco	6,583	282	1	45	161	19	4	5	1	325	......	......	......	1	....	(1)	Attendance on preparatory kindergarten school.
Skowhegan	5,341	229	2	38	172	29	4	6	2	399	324	216	180	2	Yes...	1900	Graduation from kindergarten training school.
Winslow	2,709	116	1	65	159	42	5	7	2	324	288	288	288	2	Yes...	(1)	Do.

[1] No data.
[2] Estimated.
[3] Approximate.
[4] Not fixed; depends on development.
[5] For musician.
[6] Cadets from training school.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teachers in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MARYLAND.																	
Baltimore	558,485	24,014	22	1,256	190	698	6	(1)	45	$500	$333	$333	$250	1	....	1901	Graduation from approved kindergarten training school.
Port Deposit	1,394	59	1	26	171	14	4	6	2	700	500	250	......	1	....	(2)	(2)
MASSACHUSETTS.																	
Attleboro	16,215	697	1	39	183	20	4	(2)	2	525	......	......	325	1	....	1897	(2)
Boston	670,585	28,835	124	6,160	184	[3] 4,340	4	5	228	1,032	696	768	480	1	....	1888	Graduation from normal school.
Braintree	8,066	346	5	166	171	94	5	(1)	5	550	450	......	......	1	....	[4] 1893	Graduation from training school.
Bridgewater	7,688	330	1	48	183	28	4	6	2	1,000	......	......	......	2	Yes...	(2)	Normal training.
Brookline	27,792	1,195	11	423	187	315	3½	(1)	21	800	......	700	......	1	....	1889	Adequate training and experience.
Cambridge	104,839	4,508	32	1,414	191	820	4	6	28	750	510	672	510	[5] 2	Yes...	1889	Graduation from high school and training school and 1 year's experience.
Chicopee	25,401	1,092	2	78	193	46	4	6	2	620	400	560	400	2	Yes...	1899	Diploma from preparatory kindergarten training school.
Dedham	9,284	399	4	120	188	100	4	(2)	4	550	550	......	......	1	....	1903	Graduation and 1 year's experience.
Easton	5,139	220	1	39	188	19	4½	7	2	475	200	......	......	1	....	(2)	Graduation from approved kindergarten training school.
Fall River	119,295	5,129	6	337	192	234	4	5	12	700	540	620	540	1	....	1892	Graduation from high school; graduation from kindergarten training school.
Falmouth	3,144	135	1	30	174	16	4	5½	1	669	429	......	......	1	....	1906	Adequate training.
Fitchburg	37,826	1,626	3	106	155	93	5	6	4	750	450	720	400	1	....	1906	Normal graduate.
Greenfield	10,427	448	2	56	185	41	4	(1)	2	450	400	......	......	1	....	1898	High-school graduation; kindergarten training school graduation.
Haverhill	44,115	1,896	4	170	185	130	4	(2)	7	700	410	700	410	1	....	1905	Graduation from training school.
Holyoke	57,730	2,482	10	573	187	276	4	5½	20	650	450	550	400	1	....	1897	High-school graduation and kindergarten training.
Hopedale	2,188	93	1	26	174	20	4	5	2	360	360	180	180	1	....	1898	Graduation from kindergarten training school.
Lee	4,106	176	1	34	175	23	4	[1] 6	1	380	......	......	......	1	....	1912	Do.

Lowell	106,294	4,570	11	647	190	301	3½	5	22	600	550	550	550	1	....	1890	Normal school or college graduation.
Marblehead	7,338	315	2	85	178	67	4	6	5	500	400	......	......	1	....	1890	Graduation from approved kindergarten training school.
Methuen	11,448	492	5	200	196	³160	4½	(²)	6	570	380	......	......	2	Yes...	(²)	Normal or approved school.
Milton	7,924	340	5	120	179	³95	5	6	5	700	600	400	300	1	....	(²)	Graduation from normal school.
New Bedford	96,652	4,156	12	886	185	791	5	(¹)	12	750	550	......	......	2	Yes...	1897	High-school graduation; normal graduation; 1 year's experience.
Newton	39,806	1,711	14	829	189	484	4	¹7	29	675	475	300	100	1	....	1893	Graduation from approved kindergarten training school.
North Adams	22,019	946	5	223	190	114	4½	6	10	560	400	400	310	1	....	1896	Graduation from kindergarten training school.
North Attleboro	9,562	411	3	105	180	⁴92	5	6	³3	600	500	......	......	1	....	(²)	Graduation from approved school.
Northampton	19,431	835	2	80	189	72	4	6	2	440	400	......	......	1	....	(²)	(²)
Pittsfield	32,121	1,381	4	264	194	³140	4	6	8	800	480	480	400	1	....	1908	Do.
Salem	43,697	1,878	5	282	200	178	4	5	9	550	300	550	300	1	....	1895	Graduation from kindergarten training school.
Somerville	77,236	3,321	4	248	185	173	5	(²)	8	650	300	475	200	1	....	1890	College training or suitable experience.
Springfield	62,059	2,668	17	1,634	180	639	4	5	35	⁶800	700	550	⁶400	⁷1	....	1894	Graduation from kindergarten training school; successful experience.
Waltham	27,834	1,196	5	240	188	148	4½	6	9	750	......	450	......	1	....	1906	Graduation from kindergarten training school; 2 years' experience.
Westfield	16,044	689	5	190	190	126	4½	5½	10	520	400	......	......	1	....	1898	Graduation from State normal or kindergarten training school.
West Springfield	9,224	396	2	³42	185	³25	4	5	1	469	469	......	......	2	Yes...	1896	Kindergarten training or normal school.
Winchester	9,309	399	2	84	184	51	4	6	4	575	......	......	......	1	....	1893	Graduation from kindergarten school and experience.
Worcester	145,986	6,307	33	1,746	184	844	5	6	43	850	550	450	400	1	....	1892	High-school graduation; kindergarten training school.
MICHIGAN.																	
Algonac	1,204	51	2	46	180	28	5	(¹)	1	450	......	......	......	2	Yes...	1907	(²)
Alma	2,757	118	2	105	194	75	5½	6	2	550	500	500	500	2	Yes...	1903	Normal for college training.
Ann Arbor	14,817	637	2	39	186	34	5	(²)	1	700	500	......	......	2	Yes...	1909	Normal-school graduation.
Bad Axe	1,559	66	1	43	194	38	5	7	1	450	......	......	......	2	Yes...	⁴1907	State life certificate.
Baraga	1,071	46	1	52	198	50	4	(²)	1	500	......	......	......	2	Yes...	1902	Normal training.
Bay City	45,166	1,942	18	342	188	300	5	(¹)	9	750	500	......	......	2	Yes...	1905	Graduation from approved kindergarten training school.
Belding	4,119	176	4	75	200	68	5	(²)	2	550	400	......	......	2	Yes...	⁴1900	Normal college training.
Bellaire	1,050	45	1	28	180	18	5	(¹)	1	450	405	......	......	1	....	1906	Normal school training.
Benton Harbor	9,185	394	6	199	175	110	5	7	5	500	450	......	......	2	Yes...	1911	Graduation from kindergarten training school.
Bessemer	4,583	196	3	132	200	125	5	6	3	650	550	250	150	2	Yes...	1900	Two years' normal training.
Big Rapids	4,519	193	4	105	200	93	5	7	10	550	450	......	......	2	Yes...	(²)	Graduation from approved kindergarten training school.
Boyne City	5,218	224	3	125	190	73	5	7	2	522	475	238	190	2	Yes...	1907	Normal graduation; 2 years' training.
Cadillac	8,375	359	10	251	200	175	5	7	5	500	450	......	......	2	Yes...	1890	Graduation from approved kindergarten training school.
Calumet	32,845	1,412	15	740	196	653	4	6	15	700	500	450	300	2	Yes...	1885	Kindergarten certificate.
Caro	2,272	97	2	100	195	70	5	7	1	500	500	......	......	2	Yes...	(²)	College.
Cassopolis	1,358	58	1	38	190	28	5	6	1	427	......	......	......	2	Yes...	(²)	Normal or kindergarten graduation.

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[1] Not fixed; depends on development.
[2] No data.
[3] Estimated.
[4] Approximate.
[5] Have since returned to one session.
[6] Largest salaries for teachers of two sessions; smallest salaries for teachers of one session.
[7] In some cases two sessions.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teachers in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MARYLAND.																	
Baltimore	558,485	24,014	22	1,256	190	698	6	(1)	45	$500	$333	$333	$250	1	....	1901	Graduation from approved kindergarten training school.
Port Deposit	1,394	59	1	26	171	14	4	6	2	700	500	250	......	1	....	(2)	(2)
MASSACHUSETTS.																	
Attleboro	16,215	697	1	39	183	20	4	(2)	2	525	......	......	325	1	....	1897	(2)
Boston	670,585	28,835	124	6,160	184	[3] 4,340	4	5	228	1,032	696	768	480	1	....	1888	Graduation from normal school.
Braintree	8,066	346	5	166	171	94	5	(1)	5	550	450	......	......	1	....	[4] 1893	Graduation from training school.
Bridgewater	7,688	330	1	48	183	28	4	6	2	1,000	......	......	......	2	Yes...	(2)	Normal training.
Brookline	27,792	1,195	11	423	187	315	8½	(1)	21	800	......	700	......	1	....	1889	Adequate training and experience.
Cambridge	104,839	4,508	32	1,414	191	820	4	6	28	750	510	672	510	[5] 2	Yes...	1889	Graduation from high school and training school and 1 year's experience.
Chicopee	25,401	1,092	2	78	193	46	4	6	2	620	400	560	400	2	Yes...	1899	Diploma from preparatory kindergarten training school.
Dedham	9,284	399	4	120	188	100	4	(2)	4	550	550	......	......	1	....	1903	Graduation and 1 year's experience.
Easton	5,139	220	1	39	188	19	4½	7	2	475	200	......	......	1	....	(2)	Graduation from approved kindergarten training school.
Fall River	119,295	5,129	6	337	192	234	4	5	12	700	540	620	540	1	....	1892	Graduation from high school; graduation from kindergarten training school.
Falmouth	3,144	135	1	30	174	16	4	5½	1	669	429	......	......	1	....	1906	Adequate training.
Fitchburg	37,826	1,626	3	106	155	93	5	6	4	750	450	720	400	1	....	1906	Normal graduate.
Greenfield	10,427	448	2	56	185	41	4	(1)	2	450	400	......	......	1	....	1898	High-school graduation; kindergarten training school graduation.
Haverhill	44,115	1,896	4	170	185	130	4	(2)	7	700	410	700	410	1	....	1905	Graduation from training school.
Holyoke	57,730	2,482	10	573	187	276	4	5½	20	650	450	550	400	1	....	1897	High-school graduation and kindergarten training.
Hopedale	2,188	93	1	26	174	20	4	5	2	360	360	180	180	1	....	1898	Graduation from kindergarten training school.
Lee	4,106	176	1	34	175	23	4	[1] 6	1	380	......	......	......	1	....	1912	Do.

Lowell	106,294	4,570	11	647	190	301	3½	5	22	600	550	550	550	1	....	1890	Normal school or college graduation.
Marblehead	7,338	315	2	85	178	67	4	6	5	500	400	......	......	1	....	1890	Graduation from approved kindergarten training school.
Methuen	11,448	492	5	200	195	[3] 160	4½	([2])	6	570	380	......	......	2	Yes...	([2])	Normal or approved school.
Milton	7,924	340	5	120	179	[3] 95	5	6	5	700	600	400	300	1	....	([2])	Graduation from normal school.
New Bedford	96,652	4,156	12	886	185	791	5	([1])	12	750	550	......	......	2	Yes...	1897	High-school graduation; normal graduation; 1 year's experience.
Newton	39,806	1,711	14	829	189	484	4	[1] 7	29	675	475	300	100	1	....	1893	Graduation from approved kindergarten training school.
North Adams	22,019	946	5	223	190	114	4½	6	10	560	400	400	310	1	....	1896	Graduation from kindergarten training school.
North Attleboro	9,562	411	3	105	180	[4] 92	5	6	[3] 3	600	500	......	......	1	....	([2])	Graduation from approved school.
Northampton	19,431	835	2	80	189	72	4	6	2	440	400	......	......	1	....	([2])	([2])
Pittsfield	32,121	1,381	4	264	194	[3] 140	4	6	8	800	480	480	400	1	....	1908	Do.
Salem	43,697	1,878	5	282	200	178	4	5	9	550	300	550	300	1	....	1895	Graduation from kindergarten training school.
Somerville	77,236	3,321	4	248	185	173	5	([2])	8	650	300	475	200	1	....	1896	College training or suitable experience.
Springfield	62,059	2,668	17	1,634	180	639	4	5	35	[6] 800	700	550	[6] 400	[7] 1	....	1894	Graduation from kindergarten training school; successful experience.
Waltham	27,834	1,196	5	240	188	148	4½	6	9	750	......	450	......	1	....	1906	Graduation from kindergarten training school; 2 years' experience.
Westfield	16,044	689	5	190	190	126	4½	5½	10	520	400	......	......	1	....	1898	Graduation from State normal or kindergarten training school.
West Springfield	9,224	396	2	[3] 42	185	[3] 25	4	5	1	469	469	......	......	2	Yes...	1896	Kindergarten training or normal school.
Winchester	9,309	399	2	84	184	51	4	6	4	575	......	......	......	1	....	1893	Graduation from kindergarten school and experience.
Worcester	145,986	6,307	33	1,748	184	844	5	6	43	850	550	450	400	1	....	1892	High-school graduation; kindergarten training school.
MICHIGAN.																	
Algonac	1,204	51	2	46	180	28	5	([1])	1	450	......	......	......	2	Yes...	1907	([2])
Alma	2,757	118	2	105	194	75	5½	6	2	550	500	500	500	2	Yes...	1903	Normal for college training.
Ann Arbor	14,817	637	2	39	186	34	5	([2])	1	700	500	......	......	2	Yes...	1909	Normal-school graduation.
Bad Axe	1,559	66	1	43	194	38	5	7	1	450	......	......	......	2	Yes...	[4] 1907	State life certificate.
Baraga	1,071	46	1	52	198	50	4	([2])	1	500	......	......	......	2	Yes...	1902	Normal training.
Bay City	45,166	1,942	18	342	188	300	5	([1])	9	750	500	......	......	2	Yes...	1905	Graduation from approved kindergarten training school.
Belding	4,119	176	4	75	200	68	5	([2])	2	550	400	......	......	2	Yes...	[4] 1900	Normal college training.
Bellaire	1,050	45	1	28	180	18	5	([1])	1	450	405	......	......	1	....	1906	Normal school training.
Benton Harbor	9,185	394	6	199	175	110	5	7	5	500	450	......	......	2	Yes...	1911	Graduation from kindergarten training school.
Bessemer	4,583	196	3	132	200	125	5	6	3	650	550	250	150	2	Yes...	1900	Two years' normal training.
Big Rapids	4,519	193	4	105	200	93	5	7	10	550	450	......	......	2	Yes...	([2])	Graduation from approved kindergarten training school.
Boyne City	5,218	224	3	125	190	73	5	7	2	522	475	238	190	2	Yes...	1907	Normal graduation; 2 years' training.
Cadillac	8,375	359	10	251	200	175	5	7	5	500	450	......	......	2	Yes...	1890	Graduation from approved kindergarten training school.
Calumet	32,845	1,412	15	740	196	653	4	6	15	700	500	450	300	2	Yes...	1885	Kindergarten certificate.
Caro	2,272	97	2	100	195	70	5	7	1	500	500	......	......	2	Yes...	([2])	College.
Cassopolis	1,358	58	1	38	190	28	5	6	1	427	......	......	......	2	Yes...	([2])	Normal or kindergarten graduation.

[1] Not fixed; depends on development.
[2] No data.
[3] Estimated.
[4] Approximate.
[5] Have since returned to one session.
[6] Largest salaries for teachers of two sessions; smallest salaries for teachers of one session.
[7] In some cases two sessions.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teachers in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MICHIGAN—continued.																	
Cedar Springs	947	40	1	[1] 28	182	21	5	(2)	1	$475	......	......	......	1	....	1911	Life certificate.
Champion	1,069	55	1	[3] 36	196	[3] 26	4	7	1	650	$500	......	......	2	Yes...	1902	Graduation from recognized school.
Chelsea	1,764	75	2	30	200	23	5	6	1	425	......	......	......	2	Yes...	1901	Graduation from normal school.
Chesaning	1,363	58	1	17	200	12	4	(4)	1	550	550	......	......	2	Yes...	(4)	College preparation.
Coldwater	5,945	255	2	69	185	49	4	7	2	550	......	$300	......	2	Yes...	[1] 1900	State requirements.
Corunna	1,384	59	1	50	190	38	5	7	1	500	450	......	......	2	Yes...	(4)	State life certificate.
Croswell	1,380	59	1	54	200	38	5	7	1	500	......	......	......	2	Yes...	1907	State diploma.
Crystal Falls	3,775	162	5	180	196	141	5	7	4	650	500	......	$200	2	Yes...	1892	State life certificate.
Detroit	465,766	20,027	81	7,897	200	3,238	5	6	170	1,000	500	800	500	1	....	1895	Graduation from Detroit normal or equivalent.
Dowagiac	5,088	218	4	120	140	[3] 95	5	(2)	4	522	475	......	......	2	Yes...	(4)	Graduation from State normal
Durand	2,315	99	2	62	200	[3] 50	4	7	2	550	450	......	......	2	Yes...	1900	Graduation from approved school.
East Jordan	2,516	107	1	82	187	41	5	(2)	1	522	475	......	......	2	Yes...	(4)	Graduation from high school; graduation from kindergarten training school.
Eastlake	(4)	....	1	74	187	56	4	7	1	575	......	......	......	2	Yes...	1908	State life certificate.
East Tawas	1,452	62	2	32	198	28	5	(4)	1	450	425	......	......	2	Yes...	(4)	(4)
Eaton Rapids	2,094	89	1	38	197	21	5	7	1	475	......	......	......	1	....	1908	Life certificate from approved school.
Elk Rapids	1,673	71	2	36	185	32	4½	5½	2	456	427	......	......	2	Yes...	1900	Graduation from approved school.
Escanaba	13,194	567	8	254	200	150	5	[2] 6	8	650	400	300	200	2	Yes...	(4)	Life certificate; normal school.
Evart	1,386	59	1	36	198	23	5	8	1	450	......	......	......	2	Yes...	1907	Graduation from approoved kindergarten school.
Flint	38,550	1,657	12	627	190	367	4	6	12	650	400	650	400	2	Yes...	1901	Life certificate; 2 years' training.
Ford	1,039	72	2	32	200	23	4	(2)	1	550	550	......	......	1	....	1908	Normal training.
Frankfort	1,555	66	1	36	196	28	5	6	1	500	......	......	......	1	....	1906	Kindergarten diploma.
Fremont	2,009	86	2	80	100	62	4	7	1	550	450	......	......	2	Yes...	1890	Graduation from 2 years' kindergarten course.
Gaylord	1,538	65	1	35	186	25	4	6	1	522	......	......	......	1	....	(4)	State certificate.
Gladstone	4,211	181	2	80	200	60	5	6	2	550	475	250	200	2	Yes...	1895	Graduation from approved kindergarten training school.
Grand Haven	5,856	251	1	94	194	66	5	(4)	3	550	400	450	350	2	Yes...	1896	State kindergarten certificate.

Grand Rapids	112,571	4,840	68	2,059	191	1,481	4	6	52	800	400	500	400	2	Yes	(4)	Graduation from high school; graduation from kindergarten training school.
Grandville	680	29	1	30	200	[1] 28	5	(4)	1	350	......	......	......	2	Yes	1910	State kindergarten certificate.
Hamtramck	3,559	152	1	120	200	38	5	6	1	650	650	......	......	2	Yes	(4)	Life certificate.
Harbor Beach	1,556	66	1	25	196	[3] 18	5	6	1	550	450	......	......	2	Yes	(4)	Special normal school course.
Harbor Springs	1,805	77	2	38	190	32	5	7	1	522	......	......	......	2	Yes	1906	Life certificate.
Hart	1,555	66	2	46	190	36	5	7	1	522	468	......	......	2	Yes	1906	Normal graduate.
Hastings	4,383	188	1	49	200	32	5	(4)	1	525	......	......	......	2	Yes	(4)	Statutes of Michigan.
Highland Park	4,120	177	3	[1] 160	190	[1] 65	5	(4)	8	900	500	......	......	1	....	(4)	Normal school life certificate.
Holland	10,490	451	5	250	192	[3] 185	5	(2)	5	575	425	......	......	2	Yes	(4)	Graduation from approved kindergarten training school.
Houghton	5,113	219	4	176	198	160	4½	(2)	8	650	500	250	150	2	Yes	1899	Normal or kindergarten school cadets; high school graduate.
Hudson	2,178	93	3	58	187	[3] 45	5	6	8	475	380	332	332	2	Yes	(4)	Two years' special training.
Ionia	5,030	216	2	92	192	68	4	6	2	475	......	200	......	2	Yes	(4)	State certificate.
Iron River	2,450	105	1	118	197	65	5	6	2	600	500	350	200	2	Yes	(4)	Life certificate, kindergarten department.
Ironwood	12,821	551	14	477	200	341	4	6	16	650	600	400	125	2	Yes	1898	Graduation from reputable kindergarten training school.
Ithaca	1,876	80	1	46	187	38	4	6	1	500	450	......	......	2	Yes	1903	College training.
Kalamazoo	39,437	1,695	17	837	186	403	4½	6	15	690	465	465	420	[5] 1	Yes	1898	Graduation from approved kindergarten training school.
Kalkaska	1,415	60	1	33	176	26	5	6	1	495	450	......	......	1	....	(4)	State teacher's graded certificate.
Lake Odessa	1,222	52	1	32	188	29	5	7	1	475	......	......	......	2	Yes	1901	Normal school graduation.
Lansing	31,229	1,342	14	280	185	[3] 210	5	(4)	8	700	600	400	......	2	Yes	1908	Two years' course.
Lapeer	3,946	169	1	52	197	45	5	(4)	1	500	......	......	......	2	Yes	1912	College.
Lawton	1,042	44	1	20	180	16	5	(2)	1	427	......	......	......	2	Yes	1900	Normal school Michigan standard.
Leslie	1,032	44	1	25	200	18	5	6	1	450	450	......	......	1	....	1910	Normal graduate.
Lowell	1,761	75	2	28	191	26	5	7	1	400	......	......	......	1	....	1906	Graduation from normal or kindergarten training school.
Mancelona	1,200	51	2	40	179	32	4	(4)	2	472	450	......	......	2	Yes	(4)	Normal graduate.
Manchester	1,047	44	2	15	198	14	5	7	2	400	......	......	......	2	Yes	1903	One year of normal training.
Manistee	12,381	532	6	180	198	175	4	5	6	550	450	......	......	2	Yes	1903	High-school graduation; kindergarten training school graduation; State certificate.
Manistique	4,722	202	4	152	193	137	5	(2)	4	650	550	......	......	2	Yes	1897	High-school graduation; 2 years' special training.
Manton	1,069	45	1	27	177	25	5	(4)	1	450	......	......	......	2	Yes	(4)	Kindergarten certificate.
Marlette	1,062	45	1	69	195	26	5	7	1	550	......	......	......	1	....	1904	Graduation from kindergarten school.
Marquette	11,503	494	4	175	195	132	4	(4)	7	750	......	......	......	2	Yes	1901	Normal-school training.
Menominee	10,507	455	10	256	187	205	5	7	10	570	427	237	287	2	Yes	1893	Graduation from kindergarten normal.
Monroe	6,893	296	3	90	185	[3] 75	4½	6	3	500	475	......	......	2	Yes	1904	High-school graduation; kindergarten training school graduation.
Mt. Clemens	7,707	331	4	145	190	92	5	(2)	3	575	525	......	......	2	Yes	1900	Normal-school graduation.
Munising	2,952	126	2	65	195	45	5	[1] 6	1	700	500	......	......	1	....	[1] 1901	Life certificate; kindergarten work.
Muskegon	24,062	1,034	8	448	197	342	5	(2)	10	700	350	700	350	1	....	1888	High-school graduation; normal training.
Muskegon Heights	1,690	72	4	99	196	51	5	7	2	550	400	400	300	2	Yes	(4)	State kindergarten certificate.
National Mine	(4)	....	1	50	200	35	4	6	2	500	500	150	150	2	Yes	1910	Graduation from training school.
Negaunee	8,460	363	6	156	200	101	5	6	3	600	450	250	250	2	Yes	1893	Graduation from kindergarten training school; approved by State superintendent.

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[1] Approximate.

[2] Not fixed; depends on development.

[3] Estimated.

[4] No data.

[5] In some cases two sessions.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teachers in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MICHIGAN—continued.																	
Newaygo	1,207	51	1	38	200	29	5	7	1	$500	$500	......	......	1	....	1901	Normal training.
Newberry	1,182	50	2	64	198	53	4½	6	1	650	500	......	......	2	Yes	(1)	Two years' training school.
Northville	1,665	71	1	35	[2]200	30	4	(3)	1	450	450	$450	$450	2	Yes	(1)	Normal college.
Onaway	2,702	116	2	103	196	59	5	(3)	1	600	450	250	100	2	Yes	1906	Two years' course in kindergarten.
Ontonagon	1,964	84	1	38	198	30	4	6	1	600	500	300	250	2	Yes	1910	Graduation in kindergarten work.
Osceola	7,775	334	5	187	200	151	4½	6	5	700	450	350	250	1	....	1898	Graduation from approved kindergarten training school.
Otsego	2,812	120	2	60	180	45	5	7	1	(1)	451	261	190	2	Yes	(1)	Graduation from kindergarten normal.
Owosso	9,639	414	7	220	196	165	5	7	4	600	500	......	......	2	Yes	(1)	Two years' normal training.
Oxford	11,911	512	1	29	195	25	4	6	1	500	......	......	......	1	....	1910	State life certificate.
Paw Paw	1,643	70	1	27	197	23	5	7	1	546	403	......	......	1	....	1909	State normal school training.
Plainwell	1,493	64	2	64	190	35	4	6	1	380	......	......	......	2	Yes	(1)	Normal school training.
Plymouth	1,671	71	1	62	198	26	4	6	1	550	450	......	......	1	....	1900	Normal-training or equivalent.
Pontiac	14,532	624	5	252	193	116	4½	7	7	[2]700	[2]500	[2]300	[2]300	1	....	1903	2 years' normal training.
Quincy	1,347	57	1	12	186	8	5	(3)	1	427	......	......	......	2	Yes	1899	Normal kindergarten course.
Reed City	1,690	72	1	50	190	[2]38	4	6	1	450	......	......	......	2	Yes	(1)	Kindergarten certificate.
River Rouge	4,163	178	3	140	200	106	5	6	3	600	450	......	......	2	Yes	1901	Life certificate; kindergarten course.
Romeo	1,787	76	1	30	200	26	4	7	1	500	500	......	......	2	Yes	1909	Normal college graduation.
St. Charles	1,451	62	2	56	196	37	4	7	1	500	......	......	......	2	Yes	(1)	High-school graduation; 2 years' approved course.
St. Clair	2,633	113	1	48	176	29	5	7	1	600	450	......	......	2	Yes	(1)	Normal kindergarten course.
St. Johns	3,154	135	3	110	188	88	5	7	3	600	450	......	......	2	Yes	1904	High-school graduation; State normal graduation.
St. Joseph	5,936	254	2	98	178	75	5	(3)	4	550	419	225	225	1	....	1895	2 years' course in kindergarten institute.
St. Louis	1,940	83	2	72	190	44	4	6	1	475	475	......	......	2	Yes	1899	Graduate from normal school or college.
Sault Ste. Marie	12,615	542	6	200	195	180	5	(3)	3	700	550	[4]152	......	2	Yes	1900	Graduate from State normal or equivalent.
Shepherd	835	35	1	[5]30	178	22	5	7	1	450	......	......	......	2	Yes	1907	(1)
Sparta	1,203	51	1	40	198	34	5	6	1	450	......	......	......	2	Yes	(1)	Normal graduation.
Springwells	1,835	78	1	30	200	25	5	6	1	600	......	......	......	2	Yes	1902	Second grade county certificate.

Stambaugh	1,322	56	4	128	194	82	5	7	3	600	500		300	2	Yes	1904	Normal-school graduation.
Stanton	1,012	43	1	19	190	17	5	(1)	1	427				2	Yes	(1)	(1)
Sturgis	3,635	156	1	98	190	90	4	6	1	475				2	Yes	1907	Kindergarten school graduation.
Tecumseh	2,332	100	2	27	180	23	5	6	1	500	450			2	Yes	1910	State certificate.
Three Rivers	5,072	218	2	98	185	93	4	8	4	475	427	475	331	2	Yes	1903	Kindergarten department graduation.
Travers City	12,115	520	10	230	185	213	5	6½	5	575	550			2	Yes	1903	Kindergarten training-school graduation.
Trenton	1,224	52	1	40	200	30	5	6	1	500	450			2	Yes	1910	Graduate from approved kindergarten-training school.
Wakefield	714	30	3	95	197	80	4	6	2	700	600			[6]1	Yes	1900	Graduate from State or normal kindergarten training schools.
Wayne	1,263	54	1	23	196	20	5	7	1	475	400			1		1910	Normal-school training.
Whitehall	1,437	61	2	40	188	32	4	7	1	475	380			2	Yes	1900	Kindergarten course.
Wyandotte	8,287	356	3	150	170	68	4	6	2	600	425			[6]1	Yes	(1)	Graduate from approved school.
Yale	1,223	52	2	42	186	28	5	(1)	1	570				2	Yes	1908	Graduate from approved kindergarten school.
Ypsilanti	6,230	267	3	125	177	79	4	6	4	1,098	1,000			1		1888	College degree and professional training.
Zeeland	1,982	85	1	70	198	65	5	7	2	550				2	Yes	1905	Normal-school graduation.
MINNESOTA.																	
Akeley	2,574	110	1	48	180	38	4½	6	1	540	495			2	Yes	1908	Graduate from kindergarten training school.
Aurora	1,919	82	2	82	185	60	5	6	2	700	650	650	650	2	Yes	1908	2 years' course.
Bemidgi	5,099	218	1	60	180	35	5	(1)	1	585	495			2	Yes	1909	Normal-school training.
Biwabik	1,690	72	1	50	185	36	4½	(1)	1	835				2	Yes	[5]1903	Graduate from kindergarten normal school.
Blue Earth	2,319	99	1	61	176	[2]46	5	6	1	517	450			1		1900	High-school graduation; 2 years' kindergarten school.
Buhl	1,005	43	2	75	194	[2]56	4½	6	2	825	700			2	Yes	1909	Graduate from kindergarten training school; experience.
Cass Lake	2,011	86	1	47	180	25	4	7	1	540				1		1907	State permit.
Chisholm	7,684	330	6	190	184	157	5	7	6		700		650	2	Yes	1902	2 years' kindergarten training; 2 years' experience.
Coleraine	1,613	[4]69	6	116	190	92	4½	6	4	870	690			2	Yes	1907	High-school graduation; kindergarten training 2 years.
Deer River	900	38	1	40	180	22	5	(1)	1	540	495			2	Yes	1910	Graduate from special school.
Duluth	78,466	3,374	22	661	190	[5]495	4	(1)	17	500				2	Yes	(1)	Same as grade teachers.
Ely	3,572	153	3	149	185	133	5	6	4	712	570	475		2	Yes	(1)	Normal-school graduation.
Eveleth	7,036	302	9	300	180	275	5	(3)	8	760	622	760	570	2	Yes	1904	Normal-school graduation; 2 years' experience.
Gilbert	1,700	73	5	146	200	128	5	6	8	750	650	700	650	2	Yes	[5]1905	Graduation from approved kindergarten school.
Grand Rapids	2,230	95	2	45	190	35	5	7	2	812	432	432	432	2	Yes	1906	Professional training.
Hibbing	8,832	379	8	310	200	201	5	6	10	850	750	750	750	2	Yes	1905	High-school graduation; 2 years' professional training.
Jackson	1,907	81	2	60	178	50	5	(1)	2	540	450			2	Yes	(1)	Normal-school graduation.
Keewatin	696	29	2	64	185	40	4	6	2		617		570	2	Yes	1910	Graduate from approved kindergarten-training school.
Lake City	3,142	135	1	52	180	40	5	(3)	1	495				1		1904	Advanced normal or kindergarten normal.

[1] No data.
[2] Estimated.
[3] Not fixed; depends on development.
[4] Cadets from training school.
[5] Approximate.
[6] In some cases two sessions.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teachers in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MINNESOTA—contd.																	
Lake Crystal	1,055	45	1	21	176	14	5	(1)	1	$585	$450	......	......	2	....	1911	Graduate from advanced State normal.
Mankato	10,365	445	4	131	176	115	5	(1)	4	540	450	......	......	2	Yes...	1907	Minnesota normal advanced kindergarten course.
Minneapolis	301,408	12,960	26	1,052	187	[2] 789	5	[1] 6	20	1,000	750	$750	$500	2	Yes...	1900	High-school graduation; normal-school graduation; 1 year teaching.
Mountain Iron	1,343	57	1	49	195	39	5	6	1	800	......	......	......	2	Yes...	1898	Graduate from kindergarten course.
Nashwauk	2,080	89	4	130	185	90	4	[1] 7	4	688	665	622	522	2	Yes...	1907	Graduate from recognized kindergarten training school.
Ortonville	1,774	76	1	54	180	[2] 40	4	6	1	585	......	......	......	2	Yes...	1912	Kindergarten course.
Owatonna	5,658	242	2	48	175	38	5	6	2	495	......	270	270	2	Yes...	1910	High-school graduation; special kindergarten preparation.
Park Rapids	1,801	77	2	40	172	35	5	6	2	630	450	495	450	2	Yes...	1904	Normal and special kindergarten preparation.
St. Charles	1,159	49	1	20	180	17	5	(1)	1	450	......	......	......	2	Yes...	(3)	Graduate from school in primary methods.
St. Paul	214,744	9,233	74	2,700	190	[2] 2,000	5	6	63	900	600	600	500	2	Yes...	1891	Normal school graduation.
Springfield	1,482	63	1	30	180	26	5	7	1	495	450	......	......	2	Yes...	1903	Graduate from State normal school.
Tower	1,111	47	2	77	176	67	5	6	2	585	540	......	......	2	Yes...	1907	One year of kindergarten training.
Tracy	1,876	80	1	40	180	[2] 30	5	(5)	1	450	......	......	......	2	Yes...	1900	Graduate from kindergarten course.
Virginia	10,473	450	7	350	200	330	4½	6	11	1,200	900	1,020	840	2	Yes...	1904	Normal-school graduation; 2 years' experience.
Wells	1,755	75	2	55	175	35	4½	6	1	585	450	......	......	2	Yes...	1903	Normal training or special kindergarten training.
Windom	1,749	74	4	55	172	[2] 41	5	6	2	495	450	......	......	2	Yes...	[4] 1900	State normal-school graduation.
Winona	18,583	799	7	408	190	[2] 306	5	6	6	650	505	500	365	2	Yes...	1899	Graduate from kindergarten normal school; 2 years' experience.
Wobasha	2,622	112	2	35	180	28	5	6	1	495	450	......	......	2	Yes...	(3)	Graduate from State normal school.

MISSISSIPPI.																
Aberdeen	8,708	159	1	70	180	67	5	(1)	1	630	630	......	......	2	Yes...	1900	Experience in primary teaching.
Greenville	9,610	418	1	26	180	21	4½	6	1	675	......	......	......	1	....	1900	Kindergarten-training school.
Laurel	8,465	363	6	252	157	190	5	[1] 6	6	720	450	405	315	2	Yes...	1909	Professional training or 2 years' kindergarten experience.
Long Beach	1,026	43	1	12	140	10	4	6	1	440	......	......	......	2	Yes...	1911	Best that can be secured.
Natchez	11,791	507	2	109	180	76	4	6	3	540	360	315	135	1	....	1896	State teacher's license and license of national association.
Philadelphia	1,209	51	1	30	120	22	4	6	1	270	......	......	......	1	....	1912	(3)
Yazoo City	6,796	291	1	35	180	23	4	6	1	675	......	675	......	1	....	1905	(3)
MISSOURI.																
Caruthersville	3,655	157	2	100	180	75	6	(1)	2	495	450	......	......	2	Yes...	1903	Normal elementary certificate.
Cape Girardeau	8,475	364	1	28	120	15	(3)	(1)	1	850	......	......	......	1	....	1903	Normal-school graduation.
Kansas City	248,381	10,680	40	2,511	186	1,476	6	[1] 7	69	750	600	450	300	[5] 1	....	1896	Pass examination.
Kirkwood	4,171	179	1	68	186	50	5	6	2	700	600	......	......	1	....	1908	Graduate from kindergarten-training school.
Marshfield	1,193	51	1	60	160	45	5	7	1	400	......	......	......	2	Yes...	(3)	(3)
St. Joseph	77,403	3,329	2	80	178	70	6	(1)	2	810	450	......	......	1	....	1909	Special preparation in some institution.
St. Louis	687,029	29,542	155	11,025	200	5,537	6	(3)	272	[6] 1,120	[6] 920	[6] 700	[6] 640	[5] 1	Yes...	1873	Graduate from kindergarten normal of St. Louis.
MONTANA.																
Helena	12,515	538	6	130	190	95	4	6	6	1,200	660	960	600	1	....	1893	Graduate from kindergarten-training school.[7]
NEBRASKA.																
Albion	1,584	68	2	64	176	47	5	6	1	630	......	......	......	2	Yes...	1901	Normal-school graduation.
Aurora	2,630	113	2	90	180	78	4½	7	2	540	450	450	......	2	Yes...	1912	Two years' kindergarten training.
Bancroft	742	31	1	35	178	20	5	6	1	585	......	......	......	2	Yes...	(3)	College education and 3 years' experience.
Broken Bow	2,260	97	2	110	180	77	5	(1)	2	630	450	135	......	2	Yes...	(3)	Graduate from State normal.
Cedar Rapids	576	25	1	41	175	32	5	....	1	495	......	......	......	2	Yes...	1902	County certificate with special work.
Columbus	5,014	215	4	110	180	85	5	6	2	585	540	......	......	2	Yes...	1899	Graduate from standard normal.
Dundee	1,023	43	2	43	180	30	5	(3)	1	630	......	......	......	2	Yes...	1910	Meet requirements of State.
Edgar	1,080	46	1	20	172	15	5	6	1	495	......	......	......	2	Yes...	1907	State certificate.
Falls City	3,255	140	6	110	175	95	5	(1)	6	540	540	180	180	2	Yes...	1897	One year kindergarten training; 1 year's experience.
Florence	1,526	65	2	40	178	22	5	7	1	585	585	......	......	2	Yes...	1909	High-school graduation or equivalent; also 2 years' kindergarten training.
Fremont	8,718	374	5	175	178	165	5	6	5	600	460	......	......	2	Yes...	1909	High-school graduation; 1 year cadet; additional work at kindergarten college.
Geneva	1,741	74	1	29	[2] 175	24	5	8	1	517	......	......	......	2	Yes...	(3)	(3)
Genoa	1,376	59	2	45	175	38	5	(1)	1	540	540	405	405	2	Yes...	1900	Normal training.
Harvard	1,102	47	2	27	180	25	5	7	1	450	......	......	......	2	Yes...	(3)	First-grade kindergarten certificate.
Havelock	2,680	115	2	75	180	60	5	6	1	540	......	......	......	2	Yes...	1905	Kindergarten certificate Nebraska law.
Kearney	6,202	266	6	250	180	229	5	(3)	8	562	495	495	405	2	Yes...	(3)	Normal-school graduate.

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[1] Not fixed; depends on development.
[2] Estimated.
[3] No data.
[4] Approximate.
[5] In some cases two sessions.
[6] Largest salaries for teachers of two sessions; smallest salary for teachers of one session.
[7] Also musical ability, good health, personality.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teachers in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
NEBRASKA—continued.																	
Lincoln	43,973	1,891	14	852	175	692	4¾	6	14	$765	$585	$450	$315	[1] 1	Yes	1893	High-school graduate; 2 years' kindergarten training; 2 years' experience.
Minden	1,559	67	1	40	179	26	4¾	6½	1	495	450			1		1910	Normal-school graduation.
Norfolk	6,025	259	6	143	172	86	5	(2)	5	585	405	180	180	2	Yes	1910	Graduate from standard kindergarten-training school.
North Bend	1,106	47	1	28	180	20	5	(3)	1	540				2	Yes	1905	State normal school.
Omaha	124,096	5,336	35	1,908	190	1,237	5	6	52	830	500	500	420	[1] 1	Yes	1893	High-school graduation and teachers' training school.
Pierce	1,200	52	1	23	177	[4] 17	5	(3)	1	675				2	Yes	(3)	First grade county or State kindergarten certificate.
Red Cloud	1,686	72	2	72	175	55	5	(2)	2	540	450	450	300	2	Yes	(3)	Normal school training.
St. Paul	1,336	57	1	28	178	16	5	6	1	495				2	Yes	1907	State certificate, complete course.
Scotts Bluff	1,746	75	2	100	170	50	5	8	1	675	540			2	Yes	1906	City certificate.
Seward	2,106	91	2	67	175	42	5	[2]6	1	495	450			2	Yes	(3)	Regular kindergarten training.
South Omaha	26,259	1,129	12	538	190	189	5	6	12	713	570	523	475	2	Yes	1909	High-school graduation; 2 years' kindergarten training.
Sutton	1,702	73	2	40	173	36	5	7	1	450				2	Yes	1902	City State certificate; 2 years' experience.
Tecumseh	1,748	75	2	40	175	35	5	7	1	585	450			2	Yes	1908	City first-grade certificate.
Tekamah	1,524	66	2	48	180	32	5	6	1	495	495			2	Yes	1911	City State certificate.
Valentine	1,098	47	1	[4] 28	174	[4] 20	5	(2)	1	585	585			2	Yes	1912	Special training, experience.
Wayne	2,140	92	2	60	175	50	5	7	2	585	540	135	90	2	Yes	1909	Graduation from standard kindergarten training school.
West Point	1,776	76	2	30	175	25	5	(2)	2	450	225	225	225	2	Yes	1908	No special requirement.
Wilber	1,219	52	2	38	176	32	5	(2)	1	563				2	Yes	(3)	Normal-school graduation in kindergarten course.
York	6,235	268	2	101	175	68	5	6	2	585	450	405	270	2	Yes	1900	Kindergarten training school graduation.
NEVADA.																	
Goldfield	4,838	107	1	58	184	[4] 40	5	6	1	1,350				1		1909	Kindergarten college graduation.
Reno	10,867	367	2	131	177	64	4½	6	3	900	675		630	1		1895	Graduation from recognized kindergarten training school.

NEW HAMPSHIRE.																	
Claremont	7,599	327	2	39	180	30	5	6	2	432	......	......	......	2	Yes...	(3)	Graduation from kindergarten training school.
Concord	21,497	924	6	219	180	148	4	6	10	550	400	400	300	1	....	1891	Graduation from standard kindergarten training school.
Franklin	6,132	264	2	40	160	30	4½	6	2	340	340	......	......	1	....	1893	Graduation from regular kindergarten training school.
Keene	10,068	433	2	68	172	60	4	(3)	4	490	350	144	144	1	....	1892	Graduation from kindergarten training school.
Manchester	70,063	301	4	228	182	133	3½	6	8	700	400	......	......	1	....	1903	Do.
Nashua	26,005	1,118	7	280	171	224	4	6	14	450	396	396	351	1	....	1893	Do.
Newport	3,765	161	1	44	173	26	4	7	2	414	......	108	......	1	....	1902	Normal-school graduation.
Portsmouth	11,269	484	4	122	177	87	5	(2)	5	650	400	......	......	1	....	1895	Graduation from approved kindergarten training school.
Walpole	2,668	115	2	46	175	38	5	(2)	1	432	396	......	......	2	Yes...	1905	Normal graduate.
NEW JERSEY.																	
Asbury Park	10,150	436	4	202	180	143	4	6½	7	800	550	600	550	1	....	1897	High-school graduation; 2 years' kindergarten training school.
Atlantic City	46,150	1,984	13	748	184	530	5	6	13	1,000	600	550	550	2	Yes...	1904	Normal school or kindergarten training school graduation.
Audubon	1,343	58	1	48	183	20	4	6	1	500	......	......	......	1	....	1906	High-school graduation; kindergarten training school graduation; State certificate.
Bayonne	55,545	2,388	13	787	195	392	4	7	13	950	600	950	600	1	....	(3)	(3)
Bloomfield	15,070	648	14	517	187	260	4½	6	14	700	550	......	......	2	Yes...	1898	Normal school kindergarten course or equivalent.
Boonton	4,930	212	2	75	185	65	4	6	2	650	500	......	......	2	Yes...	1900	Kindergarten certificate.
Bordentown	4,250	183	2	81	182	32	4	7	1	500	400	450	400	2	Yes...	1908	Special State certificate; special training.
Boundbrook	3,970	171	1	54	186	41	5	(2)	1	650	......	......	200	1	....	1899	Normal or kindergarten training, 1 year at least.
Butler	2,265	97	2	45	190	30	4	7	1	500	......	......	......	2	Yes...	1910	Normal kindergarten training.
Caldwell	2,236	96	1	61	188	28	4	[2]6	1	850	500	......	500	1	Yes...	(3)	Normal-school graduation.
Camden	94,538	4,065	12	343	192	182	5	6	8	750	500	......	......	2	Yes...	1900	High-school graduation; 2 years' kindergarten training school.
Cape May	2,471	106	2	50	183	25	4	7	2	570	570	......	......	1	....	(3)	Normal-school graduation.
Carlstadt	3,807	164	2	136	198	83	4½	6	2	775	550	......	......	2	Yes...	(3)	State requirements.
Carlton Hill	(3)	....	1	32	188	27	4	6	1	800	500	......	......	2	Yes...	1908	Normal-school training.
Cedar Grove	670	29	1	24	188	16	4	6	1	700	500	......	......	1	....	1902	Normal or training school graduation.
Chatham	1,874	81	1	51	184	39	4	7	1	700	700	......	......	1	....	1909	Normal school and special kindergarten training.
Cliffside Park	3,394	146	2	149	194	101	4	6	4	(5)	(5)	......	550	2	Yes...	1906	Special kindergarten license approved by State superintendent.
Clifton	8,100	348	10	512	193	467	4	7	9	575	500	......	......	2	Yes...	(3)	Special kindergarten training.
East Orange	34,371	1,478	18	658	186	404	4	6	18	900	600	600	400	2	Yes...	(3)	Graduation from high school; graduation from 2 years' kindergarten training school.

[1] In some cases two sessions.

[2] Not fixed; depends on development.

[3] No data.

[4] Estimated.

[5] No standard; depends on efficiency.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teachers in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
NEW JERSEY—contd.																	
East Rutherford	4,275	184	6	135	189	81	4	7	3	$900	$600			2	Yes	1893	Normal or kindergarten training school.
Egg Harbor	2,181	94	2	42	187	35	5	6	1	675				2	Yes	1892	No standard.
Englewood	9,924	428	5	224	185	129	4	6	8	850	600	$600	$500	1		1895	High-school graduation; 2 years' kindergarten training school.
Fairview	2,441	105	4	118	189	106	4	7	3	625	525			2	Yes	(1)	Special kindergarten certificate; 2 years' special training.
Flemington	2,693	116	2	35	186	30	4	7	1	600	600			2	Yes	1900	Normal kindergarten training.
Garfield	10,213	439	4	324	193	237	4	7	4	750	450	750	450	2	Yes	1902	High-school graduation; 2 years' normal.
Garwood	1,118	48	1	53	184	29	4	7	1	675	600			1		1908	New Jersey special kindergarten certificate.
Glen Ridge	3,260	140	3	135	181	81	4	6	4	950	650	700	600	1		1893	Kindergarten training school graduation.
Hackensack	14,050	604	4	402	186	336	4	7	12	900	700	800	500	2	Yes	1894	Special kindergarten certificate.
Hackettstown	2,715	117	1	56	184	35	5	[2]5½	1	500				2	Yes	1907	(1)
Haddonfield	4,142	178	2	56	182	25	4	(1)	1	550	550			2	Yes	1908	High-school graduation; special kindergarten training.
Haledon	2,500	107	2	84	187	44	4	7	2	700	575			2	Yes	1898	New Jersey special kindergarten certificate.
Hammonton	5,088	219	2	159	184	43	4	7	2	650	650	200	200	2	Yes	1894	Graduation from approved kindergarten training school.
Hasbrouck Heights	2,155	93	2	63	189	37	4½	7	1	725				2	Yes	1898	Graduation from normal-school course.
Haworth	588	25	1	15	193	6	4	6	1	720	720			1		(1)	General teacher's certificate and special kindergarten certificate.
Hawthorne	3,400	146	3	109	193	81	4	6	3	800	600			[3]2	Yes	(1)	Kindergarten training school or normal school.
High Bridge	1,545	66	2	42	185	25	4	7	1	525	525			2	Yes	1903	Kindergarten training teacher's certificate.
Hoboken	70,324	3,024	18	852	194	[4]639	4	7	18	1,300	900	1,200	600	2	Yes	1897	Normal-school graduation; special kindergarten certificate.
Jamesburg	2,075	89	2	72	190	50	5	(5)	1	500	500			2	Yes	(1)	State normal kindergarten course.

Jersey City	267,779	11,514	10	545	194	293	4	[5]6	6	1,200	600	600	600	2	Yes	1899	High-school graduation; 2 years' kindergarten training experience.
Kearney	18,659	802	5	130	191	[4]97	4	[5]6	5	900	600	......	......	[6]1	Yes	1905	Kindergarten normal; State requirements.
Leonia	1,486	64	1	31	188	15	4	(5)	1	600	......	......	......	1	....	1905	State certificate.
Little Ferry	2,541	109	2	100	189	54	4	7	2	600	550	......	......	1	....	1909	High-school graduation; kindergarten certificate.
Lodi	4,138	178	4	244	188	135	4	6	8	700	550	600	550	2	Yes	1902	Graduation from kindergarten training school.
Long Branch	13,298	572	6	229	188	160	4	[5]6	4	800	600	......	550	2	Yes	1899	Graduation from excellent kindergarten training school.
Matawan	1,646	71	2	89	179	65	5	(1)	1	550	......	......	......	2	Yes	1895	Trained teacher.
Midland Park	2,001	86	2	89	190	52	4	[5]6	1	700	......	......	......	2	Yes	1901	Two years' kindergarten training.
Millburn	3,720	159	2	81	189	69	4	6	3	650	500	400	400	1	....	1900	Graduation from kindergarten training class.
Montclair	21,550	927	14	375	183	214	4	6	14	875	600	800	500	2	Yes	1889	Graduation from kindergarten training school; 2 years' experience.
New Brunswick	23,388	1,006	2	154	187	100	4	[5]6	2	750	600	300	......	2	Yes	1899	State kindergarten certificate; graduation from approved normal.
New Providence	893	37	1	43	190	32	4	6	1	(1)	(1)	......	......	1	....	1908	Normal-school graduation.
Newark	347,469	14,940	102	9,291	192	4,579	4	6	118	1,100	580	1,050	580	2	Yes	1896	High-school graduation or equivalent; graduation from approved training school.
Newton	4,467	192	4	103	187	80	4	7	2	550	500	......	......	2	Yes	1899	Normal-school training.
Nutley	6,009	258	3	129	187	90	4½	6½	4	800	550	......	550	1	....	1904	High-school graduation; kindergarten training-school graduation.
Orange	29,630	1,274	12	716	190	386	4	6	13	800	725	600	275	2	Yes	1899	High-school graduation; kindergarten normal-school graduation.
Palisades Park	1,411	61	2	46	197	39	5	[5]6	1	625	500	......	......	2	Yes	1908	State kindergarten certificate; kindergarten training school.
Palmyra	3,000	129	2	108	184	75	5	6	2	450	400	......	......	2	Yes	1903	Special training in kindergarten school.
Park Ridge	1,401	60	2	36	187	17	4	7	1	550	550	......	......	2	Yes	1902	High-school graduation; kindergarten normal graduation; State certificate.
Passaic	54,773	2,355	18	1,148	189	600	4	[5]6	17	900	550	......	......	2	Yes	1889	High-school graduation; graduation from approved kindergarten training school.
Paterson	125,600	5,401	24	2,087	193	[4]1,700	4½	6	24	850	475	......	......	2	Yes	1884	High-school graduation; 2 years' professional training.
Perth Amboy	32,121	1,381	14	608	190	413	4	7	8	950	500	400	400	2	Yes	1906	High-school graduation; graduation from recognized kindergarten training school.
Plainfield, including North Plainfield	26,667	1,147	16	500	180	270	4	6	16	900	540	810	540	2	Yes	1890	High-school graduation; special kindergarten course.
Point Pleasant	1,003	43	1	30	187	15	4	7	1	525	525	......	......	1	....	1908	Normal-school graduation.
Princeton	5,136	221	3	101	183	82	4	7	3	650	525	......	......	2	Yes	1895	Special kindergarten State certificate.
Prospect Park	2,719	117	2	82	190	51	4	[5]5	1	450	450	......	......	2	Yes	1899	Kindergarten training-school graduation; county or State examination.
Ridgewood	5,416	233	3	107	190	58	4	7	3	800	675	......	......	1	Yes	1894	State license for kindergarten teachers.
Riverton	1,788	77	1	38	183	22	4	6	1	650	......	......	......	1	....	1897	High-school graduation; State certificate.
Roselle	2,725	117	4	100	195	[7]60	4	7	2	675	600	......	......	2	Yes	(1)	Graduation from approved school.
Roselle Park	3,138	135	2	90	184	59	4	[5]6	2	700	......	400	......	2	Yes	1909	College or normal graduation.

[1] No data.

[2] First half year in kindergarten work; last half year in first-grade work.

[3] Kindergarten in forenoon, first-grade work for advanced children in afternoon.

[4] Estimated.

[5] Not fixed; depends on development.

[6] In some cases two sessions.

[7] Approximate.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teacher in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
NEW JERSEY—contd.																	
Rutherford	7,045	303	3	170	188	107	4	7	3	$800	$525			[1] 2	Yes	1890	High-school graduation; kindergarten training-school graduation; 2 years' experience.
Salem	6,614	284	2	58	185	24	4	7	1	550				2	Yes	(3)	Four years' approved high school; examination in kindergarten work.
Scotch Plains	1,000	43	1	36	184	23	4	6	1	650				1		1909	State or county special certificate.
Sea Bright	1,220	52	2	56	182	34	4	[3] 6	1	675	600			2	Yes	[4] 1901	High-school graduation; kindergarten training-school graduation.
Somerville	5,060	218	4	115	188	57	4	6	3	650	625	$200		2	Yes	1904	Kindergarten training school graduation.
South Orange	6,014	259	3	154	189	82	4	[3] 6	5	875	600	500	$400	1		1900	High-school graduation; 2 years' normal training.
South River	4,772	205	6	128	185	90	4	7	3	600	550			2	Yes	1908	High-school graduation; special normal or kindergarten training.
Springfield	1,278	54	1	49	189	32	4	7	1	650	500			2	Yes	1901	High-school graduation; kindergarten training-school graduation.
Sussex	1,212	52	3	[4] 150	192	[4] 112	4	(3)	4	650	500	500	500	2	Yes	(3)	Special kindergarten certificate.
Tenafly	2,756	118	1	51	195	22	4	6	1	750				1		1900	Graduation from kindergarten training school or normal.
Totowa	1,130	49	2	42	192	25	4	6	1	600	450			2	Yes	1905	Graduation from normal or kindergarten training school.
Trenton	96,815	4,163	54	1,969	192	1,173	4	[3] 6	55	840	440	840	440	2	Yes	1888	Graduation from high school; graduation from kindergarten training or normal school.
Verona	1,675	72	1	35	188	17	4	6	1	700	700			1		1904	Normal-school training.
Wallington	3,448	191	2	127	190	64	4	6	1	600	575			2	Yes	1899	Graduation from kindergarten training school.
West Hoboken	35,403	1,522	10	409	193	360	4	7	6	996	636			2	Yes	1901	Normal-school training.
West New York	13,560	583	5	292	196	140	4	7	4	950	500			2	Yes	1903	Kindergarten certificate.
Westfield	6,420	276	4	143	181	[4] 106	4	[3] 6	5	650	600	400	400	1		1895	High-school graduation; 2 years' approved kindergarten training.

Woodbine	2,399	102	2	66	168	43	4	7	1	720	......	......	......	2	Yes...	1900	Graduation from kindergarten training school.
Woodridge	1,043	44	2	35	196	31	5	7	1	575	500	......	......	2	Yes...	1909	Normal-school and special training.
NEW MEXICO.																	
Santa Fe	5,072	218	2	30	180	24	5	7	1	650	650	......	......	2	Yes...	1902	Special kindergarten training.
NEW YORK.																	
Akron	1,677	71	2	72	195	40	4½	(³)	1	480	400	......	......	2	Yes...	1902	Normal-school graduation.
Albany	100,253	4,310	26	1,098	185	615	4	6	33	800	500	277	......	1	....	1892	Graduation from training school approved by State board.
Allegany	1,286	55	1	21	190	13	4	(²)	1	475	425	......	......	2	Yes...	1900	Normal training course.
Amsterdam	31,267	1,344	6	451	192	360	5	6½	6	550	450	......	......	1	....	1902	Graduation from kindergarten training school.
Auburn	34,668	1,490	8	262	187	151	4	6	8	600	400	550	400	⁵1	Yes...	1899	Diploma of normal school or equivalent.
Binghamton	48,443	2,083	14	738	194	468	4	6	25	600	400	500	400	2	Yes...	1893	Normal-school graduation.
Brocton	1,181	50	1	30	190	15	5	6	1	475	......	......	......	1	....	1895	Graduation from kindergarten course in State normal.
Bronxville	1,863	79	1	38	186	26	4	6	2	1,000	500	300	......	1	....	1905	Graduation from recognized kindergarten training school.
Buffalo	423,715	18,219	53	⁶3,100	192	2,256	4	(³)	77	900	500	600	400	2	Yes...	1892	High-school graduation; kindergarten training-school graduation.
Canajoharie	2,273	97	2	40	188	33	5	(²)	1	600	570	......	......	2	Yes...	1908	Graduation from kindergarten department, normal school.
Canton	2,701	116	2	35	192	23	4	6	1	550	500	......	......	2	Yes...	1903	Graduation from normal or kindergarten training school.
Catskill	5,296	227	2	45	190	23	4	7	1	500	500	......	......	2	Yes...	⁴1900	State certificate.
Cattaraugus	1,165	49	2	31	186	22	4	6	1	450	400	......	......	2	Yes...	1897	Graduation from normal school.
Cohoes	24,709	1,062	4	163	191	85	4	6	⁶4	550	550	......	......	1	....	1885	State kindergarten certificate.
Cortland	11,504	494	1	35	187	23	5	6	1	600	400	......	......	1	....	1899	Normal-school training.
Coxsackie	2,494	107	1	51	187	39	5	7	1	450	450	......	......	2	Yes...	1907	Normal school graduation.
Dansville	3,938	168	1	36	⁴180	20	4½	6	1	450	......	......	......	1	....	1912	Normal-school training.
Delhi	1,736	74	1	30	190	25	4	5	1	425	425	......	......	1	....	1902	Do.
Dolgeville	2,685	154	1	55	189	39	4½	6	1	450	383	......	......	(²)	....	1890	Normal graduation.
Dunkirk	17,221	740	5	249	191	147	4½	6	5	600	400	......	......	2	Yes...	1905	Graduation from normal kindergarten course.
East Aurora	2,781	119	1	46	192	30	4	6	2	500	500	......	......	1	....	1893	State kindergarten license.
East Rockaway	1,200	51	1	21	188	17	4	6	1	250	......	......	......	1	....	1910	Graduation from some good normal.
East Syracuse	3,274	140	2	80	200	60	5	6	1	550	500	......	......	2	Yes...	1900	New York State license.
Fishkill on Hudson	3,902	167	2	74	190	66	5	(²)	1	600	550	......	......	2	Yes...	1907	Course in recognized kindergarten training school.
Fort Edward	3,762	161	2	106	193	80	4½	6	4	600	......	440	......	1	....	1893	Graduation from State normal.
Fredonia	5,285	227	2	86	192	63	4	6	2	500	400	500	400	2	Yes...	1895	Diploma of kindergarten normal school.
Freeport	4,836	207	5	182	187	89	4	6	3	700	600	......	......	2	Yes...	1894	Normal-school training or equivalent.
Garden City	(²)	....	1	23	179	17	4	6	1	660	......	......	......	1	....	1902	Two years' training course; special certificate.

[1] Kindergarten in forenoon, first-grade work for advanced children in afternoon.
[2] No data.
[3] Not fixed; depends on development.
[4] Approximate.
[5] In some cases two sessions.
[6] Estimated.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teacher in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
NEW YORK—contd.[1]																	
Geneva	12,446	535	4	296	191	171	4	6	6	$625	$450	$525	$400	1	....	1894	Kindergarten certificate.
Glen Cove	8,000	344	2	[1] 115	189	73	4	(²)	3	650	500	650	500	2	Yes...	(³)	State license.
Gloversville	20,642	887	7	[1] 258	192	[1] 192	5	6	7	550	450	......	......	2	Yes...	[4] 1889	Normal-school diploma or State standard.
Gowanda	2,012	86	2	37	189	21	5	(³)	1	451	......	......	......	2	Yes...	(³)	(³)
Greenport	3,089	132	2	82	187	41	4	6	1	725	725	......	......	2	Yes...	1897	State certificate based on kindergarten training.
Hempstead	4,964	213	2	34	186	21	4	6	2	700	600	700	600	1	....	1900	Graduation from normal or kindergarten training school.
Herkimer	7,520	323	3	105	189	62	4½	6½	2	575	500	......	......	1	....	1907	Normal kindergarten or special kindergarten course.
Hillburn	1,090	46	2	56	200	29	4	[2] 6	2	400	......	......	......	1	....	1909	Graduation from approved kindergarten training school.
Hornell	13,617	585	5	222	190	168	4	(²)	5	600	450	......	......	2	Yes...	1898	Graduation from State normal.
Hudson Falls	5,189	222	1	67	200	[1] 45	4	6	2	475	......	100	......	1	....	(³)	(³)
Ilion	6,588	282	3	159	187	61	4½	7	3	500	450	......	[5] 100	2	Yes...	[4] 1904	Normal-school graduation.
Irvington	2,319	99	1	24	191	15	4	6	1	725	......	......	......	2	Yes...	1904	Graduation from standard kindergarten training school.
Ithaca	14,802	636	5	140	196	86	4	(³)	5	600	450	......	......	2	Yes...	1903	Normal-school graduation.
Jamestown	31,297	1,345	9	684	194	449	5	6	13	600	450	450	......	2	Yes...	1893	Graduation from kindergarten training school.
Johnstown	10,447	449	4	152	190	122	5	(³)	4	575	500	......	......	2	Yes...	1900	Normal-school graduation.
Keeseville	1,835	78	1	20	189	16	4	8	1	500	......	......	......	2	Yes...	1900	Some special training.
Kenmore	1,020	43	2	44	193	37	4	6	1	700	500	600	400	2	Yes...	1910	Kindergarten normal course.
Lackawanna	14,549	625	2	91	191	42	4½	6	2	720	400	......	......	2	Yes...	1911	Normal certificate.
Lake Placid	1,682	72	2	62	190	36	4	5	1	550	450	......	......	2	Yes...	[4] 1905	Normal-school graduation.
Lancaster	4,364	187	1	30	187	15	4	6	1	580	400	......	......	1	....	(³)	Normal kindergarten course.
Lansingburgh	(³)	....	4	160	186	103	4	(²)	5	540	405	......	......	1	....	1895	State license.
Lawrence	1,189	50	3	126	193	86	4	6	3	750	600	......	......	2	Yes...	1898	Normal training.
Le Roy	3,771	162	2	70	186	39	5	7	1	600	450	......	......	2	Yes...	1905	Normal course of 2 years.
Lestershire	3,775	162	2	102	192	78	5	(³)	2	500	450	......	......	2	Yes...	1907	Normal course or equivalent.

Little Falls	12,273	527	5	206	186	110	3	(3)	3	600	500	......	......		Yes...	1898	State certificate.
Little Valley	1,368	58	1	38	193	23	4	(2)	1	500	400	......	......	1	....	(3)	Normal school certificate.
Lockport	17,970	772	8	200	188	102	4	5	4	500	400	......	......	2	Yes...	1896	Graduation from approved kindergarten training school.
Lynbrook	....	....	1	54	148	21	4½	6	1	575	575	......	......	1	....	1893	Kindergarten and primary course.
Lyons	4,460	191	2	95	193	64	4	[2]6	1	500	500	......	......	2	Yes...	1909	Diploma of kindergarten normal school.
Matteawan	6,727	288	2	71	185	54	5	7	2	(3)	500	......	[6]100	2	Yes...	1898	Normal, special kindergarten work.
Medina	5,683	244	4	100	196	80	5	7	2	500	450	......	......	2	Yes...	1903	Normal or kindergarten training school.
Millbrook	1,136	48	1	35	190	16	5	7	1	500	500	......	......	1	....	1904	Normal-school graduation.
Mineola	1,981	85	1	55	198	32	5	7	1	700	600	......	......	1	....	1909	Normal training school graduation.
Mount Vernon	30,919	1,329	10	460	190	191	4	6	11	1,200	600	600	600	1	....	1906	High-school graduation or equivalent; normal or approved training school.
New Paltz	1,230	52	1	25	180	14	4	6	1	....	900	......	......	1	....	(3)	Normal training.
New Rochelle	28,867	1,241	14	721	185	341	4	[4]6	16	[7]1,050	600	850	600	2	Yes...	1893	Two years' professional training; State license.
New York	4,766,883	204,975	847	52,226	192	23,158	4	[4]6	834	1,250	600	......	......	2	Yes...	1893	High-school graduation; 2 years' professional training.
Niagara Falls	30,445	1,309	10	625	193	372	4¾	(2)	18	600	500	400	350	2	Yes...	1891	(3)
North Tarrytown	5,421	233	2	114	190	45	4	6	2	725	600	......	(6)	2	Yes...	1906	Two years' training; State license.
North Tonawanda	11,955	514	8	323	198	153	4	[4]6	5	700	450	......	......	2	Yes...	1900	Graduation from kindergarten State or city normal.
Nyack	4,619	198	[5]1	68	190	33	4	6	1	700	650	......	......	2	Yes...	1891	Graduation from kindergarten training school.
Olean	14,743	633	7	300	190	222	5	(2)	7	600	450	......	......	2	Yes...	[4]1898	Normal diploma.
Oneonta	9,491	318	1	48	189	26	4	6	1	525	......	......	......	1	....	(3)	Normal-school graduation.
Ossining	11,480	493	[1]3	99	192	57	4	6	3	750	500	......	......	2	Yes...	1898	Normal-school graduation.
Owego	4,633	199	1	[1]44	189	33	4	[2]6	1	500	......	......	......	2	Yes...	1909	Normal training.
Peekskill, dist. No. 8	15,245	655	4	124	186	92	5	6	2	650	550	......	......	2	Yes...	1907	State license.
Pelham	681	31	2	[1]79	187	[1]42	4½	(2)	2	600	......	500	......	2	Yes...	1907	State requirements.
Perry	4,388	716	1	64	188	39	5	(3)	1	450	......	......	......	2	Yes...	1902	Normal-school graduation.
Piermont	1,380	64	1	48	188	36	5	(3)	1	700	550	......	......	1	....	1900	Do.
Plattsburg	11,138	523	4	145	190	84	5	6	4	500	400	......	......	[9]2	Yes...	1902	Diploma of normal school.
Pleasantville	2,207	103	1	35	200	20	5	(2)	1	650	......	......	......	1	....	1906	State normal school.
Port Chester	12,809	602	5	403	190	307	5	7	8	1,000	650	650	500	2	Yes...	1888	(1)
Port Jervis	9,564	449	2	59	192	36	5	(3)	2	600	450	......	......	2	Yes...	1909	Special training in recognized kindergarten training school.
Poughkeepsie	27,936	1,312	7	345	192	[1]258	5	(3)	7	600	500	......	......	1	....	(3)	Normal-school graduation.
Rensselaer	10,711	460	2	107	188	80	4	6	2	550	550	......	......	1	....	1902	Diploma of normal school.
Rochester	218,149	9,380	68	2,524	196	2,068	4	6	89	1,050	550	950	500	2	Yes...	1888	Two years' normal training.
Rockville Center	3,667	157	2	109	188	49	4	(2)	2	750	......	......	......	2	Yes...	1897	Kindergarten training.
Rome	20,497	881	10	280	185	250	5	7	6	500	450	......	......	2	Yes...	1893	Kindergarten teacher's certificate.
Rye	3,964	170	3	76	189	55	5	(2)	3	700	400	......	......	1	....	1899	State license.
Salem	1,250	53	1	15	190	11	5	7	1	550	......	......	......	2	Yes...	1910	Normal-school training.
Saratoga Springs	12,693	545	5	170	190	158	4½	6	8	600	400	......	......	1	....	1892	New York State kindergarten certificate.
Schenectady	72,826	3,131	18	618	189	412	4	6	18	750	500	......	......	1	....	1897	Graduation from normal or approved kindergarten training school.

[1] Estimated.
[2] Not fixed; depends on development.
[3] No data.
[4] Approximate.
[5] Untrained assistant.
[6] For musician.
[7] Largest salaries for teachers of two sessions; smallest salaries for teachers of one session.
[8] First half-year in kindergarten work, last half-year in first-grade work.
[9] Kindergarten in forenoon; first-grade work for advanced children in afternoon.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teacher in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
NEW YORK—contd.																	
Scotia	2,957	126	1	102	188	30	4	6	1	$650	$550	......	......	1	....	1903	Normal kindergarten course.
Seneca Falls	6,588	282	2	74	187	38	4	6	1	550	......	......	......	2	Yes...	1905	Normal-school training.
Solvay	5,139	220	2	86	185	80	4	6	2	750	550	......	......	2	Yes...	1898	State license.
South Glens Falls	2,247	96	2	71	190	43	4	6	1	450	450	......	......	2	Yes...	1907	Normal kindergarten certificate.
Spring Valley	2,353	101	1	[1] 30	189	23	5	8	1	570	522	......	......	1	....	1908	Normal-school graduation.
Syracuse	137,249	5,901	29	2,143	200	1,878	4	(2)	42	750	400	$750	$400	2	Yes...	1894	High-school graduation; 2 years' training in kindergarten.
Tarrytown	5,600	240	1	90	186	54	5	7	2	800	650	......	600	1	....	1900	Graduation from normal school in New York State.
Tonawanda	8,290	356	4	118	193	74	4	6	2	600	400	......	......	2	Yes...	1908	Kindergarten course in normal school.
Troy	76,813	3,302	12	667	187	312	4	6	20	650	400	650	400	1	....	1898	High-school graduation; kindergarten training school graduation.
Tuckahoe	2,722	116	4	120	190	80	5	6	[3] 4	900	600	500	500	1	....	1890	State kindergarten certificate.
Utica	74,419	3,200	[3] 30	1,498	191	787	4	6	20	700	450	700	450	2	Yes...	1893	Normal-school graduation.
Walden	4,004	172	1	110	192	48	5	(2)	1	500	450	......	......	2	Yes...	[1] 1905	State normal school license.
Warsaw	3,206	137	1	42	187	25	4	6	1	550	550	......	......	1	....	1896	Normal-school graduation.
Waterford	3,245	139	2	67	185	33	4	6	1	525	......	......	......	2	Yes...	1910	Kindergarten training or normal-school graduation.
Waterloo	3,931	168	2	50	190	35	4	6	2	600	450	......	......	1	....	(4)	Graduation from normal kindergarten course.
Watertown	26,730	1,149	9	407	189	257	4½	6	11	500	460	500	460	[5] 2	Yes...	1901	Normal-school graduation.
Watervliet	15,074	648	3	106	187	60	4	6	3	550	450	......	......	1	....	1898	Kindergarten diploma from normal or training school.
Wellsville	4,382	188	2	79	192	[1] 55	4	6	2	500	......	250	......	1	....	1910	Normal-school training.
Westfield	2,985	128	1	96	186	39	4	6	2	600	400	400	320	1	....	1897	State certificate.
White Plains	15,949	685	6	219	190	[3] 150	5	(2)	8	900	650	......	......	2	Yes...	1893	Normal-school graduation.
Yonkers	79,803	3,431	18	1,072	190	584	4	6	23	750	500	750	500	2	Yes...	1890	Graduation from high school; approved kindergarten training school certificate.

NORTH CAROLINA.																	
Asheville	18,762	806	5	373	190	150	3	6	10	390	250	300	250	1	....	1907	Graduation from kindergarten training school.
Washington	6,211	267	1	53	157	48	5	6	2	520	240	240	240	1	....	1909	Diploma of kindergarten training school.
NORTH DAKOTA.																	
Beach	1,003	43	1	43	176	32	6	7	1	675	......	......	......	[5] 2	Yes...	([4])	Graduation from kindergarten training school.
Cooperstown	1,019	43	[3] 1	26	180	20	5½	[1] 7	1	900	675	......	......	2	Yes...	1908	Normal-school training; 1 year's special kindergarten training.
Litchville	484	20	1	23	60	20	4	6	1	600	......	......	......	1	....	June, 1912	([4])
OHIO.																	
Akron	69,067	2,969	[6] 30	1,551	190	805	5	6	20	800	500	......	......	[7] 1	Yes...	1902	High-school graduation; kindergarten training-school graduation.
Barberton	9,410	404	2	60	183	48	5	6	1	570	......	......	......	2	Yes...	1911	Graduation from kindergarten college.
Bellevue	5,209	223	2	64	176	45	4½	6	1	360	......	......	......	2	Yes...	1911	Graduation from kindergarten training school.
Canton	50,217	2,159	3	112	185	74	4	6	3	900	500	200	200	1	....	1900	Do.
Cincinnati	363,591	15,634	46	2,833	200	1,883	4½	6	72	[8] 1,000	[8] 600	500	300	1	....	1905	High-school training; 2 years' professional training.
Cleveland	560,663	24,108	142	5,163	173	4,124	5	6	127	1,055	583	686	583	2	Yes...	1897	Graduation from kindergarten training school.
Dayton	116,577	5,012	23	1,287	190	721	5	6	21	700	500	......	......	2	Yes...	([4])	High-school graduation; 2 years' normal training.
Delaware	9,076	390	1	38	180	26	4½	6	1	500	400	......	([9])	2	Yes...	1897	Graduation from approved kindergarten training school.
Elyria	14,825	637	6	182	185	172	5	6	6	600	500	......	([9])	1	....	1908	Graduation after 2 years' kindergarten course.
Fostoria	9,597	412	4	110	174	65	4	7	2	495	405	......	......	2	Yes...	1905	Graduation from training school.
Geneva	2,496	107	1	42	184	30	4	[1] 6	2	619	......	......	......	1	....	1896	Graduation from kindergarten training school.
Greeneville	6,237	267	2	54	180	31	4	[1] 6	2	630	540	540	540	2	Yes...	1905	Graduation from approved kindergarten school or college.
Lakewood	15,181	652	4	245	175	140	5	6	5	711	567	495	......	2	Yes...	1906	Graduation from kindergarten training school.
Lebanon	2,698	115	1	41	190	35	5	6	2	600	500	600	500	1	....	1893	Graduation from Cincinnati kindergarten training school.
Lockland	3,439	147	1	51	195	38	5	6	1	850	550	......	......	1	....	1902	Graduation from college; special training.
Mansfield	20,768	893	8	341	175	[1] 224	4	6	16	360	360	225	90	1	....	1896	Graduation from kindergarten training school.
Medina	2,734	117	1	36	180	27	4	6	1	600	600	......	......	1	....	1907	Two years' special training.
Napoleon	4,007	172	2	51	178	45	4	6	1	495	......	......	......	2	Yes...	([4])	Graduation from recognized training course.

[1] Approximate.
[2] Not fixed; depends on development.
[3] Estimated.
[4] No data.
[5] Kindergarten part time and some first-grade work; different children.
[6] First half year in kindergarten work; last half year in first-grade work.
[7] In some cases two sessions.
[8] Highest salary for university graduate, lowest salary for high-school graduate.
[9] Cadets from training school.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers. Number.	Kindergarten teachers. Maximum salary.	Kindergarten teachers. Minimum salary.	Assistant kindergarten teachers. Maximum salary.	Assistant kindergarten teachers. Minimum salary.	One or two sessions a day.	Same teachers in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
TEXAS.																	
El Paso	39,279	1,688	4	229	176	124	6	8	4	$900	$803	$661	......	1	....	1894	Graduation from kindergarten training school; approved by State educational department.
Fort Worth	73,312	3,152	8	[3] 320	[1] 180	[1] 175	5	7	8	450	450	(2)	(2)	1	....	1910	High-school graduation or equivalent; graduation from kindergarten training school.
Texarkana	9,790	420	1	28	140	[3] 24	5	7	1	455	435	435	......	1	....	(4)	(4)
UTAH.																	
Eureka	3,416	146	1	60	175	45	5	6	1	900	540	......	......	2	Yes...	1909	Normal graduate.
Ogden	25,580	1,099	10	365	176	310	4	6	10	900	500	300	$300	1	....	1904	High-school graduation; 2 years' training.
Park City	3,439	147	3	85	173	[3] 65	4	7	3	630	485	......	......	1	....	[1] 1906	State standard.
Salina	1,082	46	1	40	150	34	6	(4)	1	[3] 520	[3] 480	......	......	1	....	(4)	Graduation from kindergarten State normal.
Salt Lake City	92,777	3,989	18	1,351	177	766	4	5	25	1,020	600	540	480	2	Yes...	1906	Normal course or equivalent.
VERMONT.																	
Burlington	20,468	880	6	150	180	125	3	5	10	374	262	216	180	1	....	1893	Graduation from kindergarten school.
Montpelier	7,856	337	1	42	171	29	4	(5)	2	600	500	500	450	1	....	1901	Normal training.
Newport	3,684	158	1	31	175	26	4	(5)	1	405	405	......	......	1	....	1896	Graduation from kindergarten training school.
Poultney	3,644	156	3	75	175	[3] 57	5	7	3	540	384	480	384	2	Yes...	1909	Normal work.
St. Albans	6,381	274	2	106	175	62	4½	(4)	3	382	382	90	......	1	....	(4)	Graduation from training school.
VIRGINIA.																	
Harrisonburg	4,879	209	2	78	177	48	4	6	2	900	360	......	......	1	....	1909	Graduation from good normal school.
Onancock	1,001	43	1	38	180	34	5	8	1	315	......	......	......	2	Yes...	(4)	(4)
Richmond	127,628	5,488	15	718	181	449	5	7	22	585	450	495	360	1	....	1907	Graduation from kindergarten training school.

WASHINGTON.																
North Yakima	14,062	605	4	169	180	79	5	6	2	800	650	......	......	2	Yes...	1909	Graduation from State kindergarten training school; experience.
Seattle	237,194	1,027	14	215	188	111	5	6	6	1,050	810	......	......	2	Yes...	1900	(4)
Sedro Woolley	2,129	91	2	30	174	22	4	6	1	648	......	......	......	2	Yes...	1912	Graduation from training school.
WISCONSIN.																
Abbotsford	947	40	1	42	178	21	4	7	1	495	495	......	......	2	Yes...	1904	Graduation from kindergarten school.
Antigo	7,196	309	6	298	176	217	4	(4)	6	517	450	......	......	2	Yes...	(4)	Graduation from kindergarten training school.
Appleton	16,773	721	14	567	176	348	4	7	14	585	450	495	405	2	Yes...	1898	Graduation from kindergarten training school.
Arbor Vitae	1,502	64	1	[3] 20	179	15	4	[5] 7	1	540	540	......	......	2	Yes...	1898	Normal training.
Ashland	11,594	498	4	178	188	167	4	6	6	840	600	360	192	2	Yes...	(4)	Graduation from approved kindergarten training school.
Baraboo	6,324	271	2	64	176	56	4	6	2	495	432	135	135	2	Yes...	(4)	Graduation from kindergarten school.
Bayfield	(4)	......	2	87	177	53	4	6	2	450	......	......	247	2	Yes...	1892	Normal or special school graduation.
Beloit	15,125	650	11	540	185	268	4	6	12	570	475	285	238	2	Yes...	(4)	Graduaton after 2 years' training.
Benton	652	27	1	39	180	25	4	6	1	495	......	......	......	2	Yes...	1911	State normal; special training in kindergarten.
Berlin	4,636	199	4	81	190	60	4	6	2	550	500	......	......	2	Yes...	1900	Normal graduation.
Black River Falls	1,917	81	2	41	180	22	4	8	1	540	450	......	......	2	Yes...	1880	State license.
Bloomer	1,204	51	1	45	[1] 180	[1] 40	(4)	....	1	(4)	......	......	......	2	....	(4)	(4)
Bloomington	620	26	1	20	177	16	4	(5)	1	495	495	......	......	2	Yes...	1885	Normal graduation.
Boscobel	1,525	65	1	37	180	16	4	(5)	1	450	405	......	......	2	Yes...	1911	High-school graduation.
Brandon	684	29	1	12	188	8	4	7	1	456	......	......	......	1	....	1900	Normal training.
Cedarburg	498	21	2	68	196	45	4	6	1	550	450	......	......	2	Yes...	1909	Normal-school graduation.
Coleman	436	18	1	33	180	17	4	(5)	1	405	360	......	......	2	Yes...	1905	Second-grade certificate.
Columbus	2,523	108	2	60	187	35	4	[5] 6	2	[1] 522	[1] 475	[1] 190	......	2	Yes...	1902	Normal school course.
Crandon	1,833	78	1	57	176	30	4	6	1	495	......	......	......	2	Yes...	1909	High-school graduation and training-school graduation.
Cudahy	3,691	158	2	90	194	48	4	6	1	750	......	......	......	2	Yes...	1909	State normal diploma.
Delavan	2,450	105	2	48	180	24	4	6	1	585	585	......	......	2	Yes...	1901	Graduation from normal training.
De Pere	4,477	192	1	50	186	[3] 36	4	(4)	1	523	475	......	......	2	Yes...	1902	Normal-school graduation.
Dunbar	1,127	48	1	38	178	16	4	6	1	562	......	......	......	2	Yes...	1905	Kindergarten certificate.
Eau Claire	18,310	787	9	350	176	247	4	(4)	9	540	450	......	......	2	Yes...	(4)	Normal graduation.
Elkhorn	1,707	73	1	25	180	18	4	(4)	1	495	......	......	......	1	....	[1] 1892	College normal diploma.
Evansville	2,061	88	1	55	178	30	5	7	1	540	450	225	135	1	....	1903	Kindergarten training school.
Florence	1,838	78	1	45	185	34	4	6	1	546	......	......	......	(4)	....	(4)	Graduation from standard kindergarten training school.
Fond du Lac	18,797	808	16	611	185	367	4	(4)	16	560	475	250	225	2	Yes...	1897	High-school graduation; kindergarten training school graduation.
Grand Rapids	6,521	280	4	139	177	82	4	6	4	585	495	225	225	2	Yes...	1899	Graduation from standard kindergarten training school.
Green Bay	25,236	1,085	1	56	190	30	4	6	1	500	500	200	200	2	Yes...	1911	Graduation from Chicago kindergarten college.
Green Lake	563	24	1	20	180	15	4	6	1	495	......	......	......	2	Yes...	1910	Normal training.
Hancock	510	21	1	59	177	50	(5)	(5)	1	900	......	......	......	2	Yes...	1910	Third-grade certificate.
Hartford	2,982	128	1	61	180	56	4	6	1	540	405	......	......	2	Yes...	1903	Normal graduation.

[1] Approximate.
[2] Cadets from training school.
[3] Estimated.
[4] No data.
[5] Not fixed; depends on development.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kindergarten teachers.		One or two sessions a day.	Same teachers in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
WISCONSIN—contd.																	
Hayward	2,999	128	1	70	180	58	4	6	2	$495	$450	$450	$405	2	Yes	1889	State license; kindergarten certificate.
Horicon	1,881	80	1	88	182	44	4	6	1	617	475	......	......	2	Yes	1910	State normal diploma.
Hudson	2,810	120	1	30	175	20	4	6	1	450	......	......	......	2	Yes	1903	High-school graduation; graduation kindergarten school.
Iron Belt	(1)	......	3	92	196	72	4	6	1	575	500	......	......	2	Yes	1902	State license.
Kaukauna	4,717	202	3	140	174	25	4	6	2	625	500	......	......	2	Yes	1903	Two years' training.
Kenosha	21,371	918	16	416	186	270	4	[2] 6	8	688	475	[3] 332	[3] 190	2	Yes	1905	**Graduation from State normal or approved training school.**
Kiel	1,244	53	2	60	195	36	4	6	1	500	450	......	......	2	Yes	1903	Normal-school diploma.
La Crosse	30,417	1,307	18	484	188	392	4	(2)	10	750	500	400	150	2	Yes	1911	Graduation from approved college.
Ladysmith	2,552	109	2	110	179	34	4	6	1	590	......	......	......	2	Yes	1910	Kindergarten training school.
Lake Geneva	3,079	132	2	83	180	33	4	6	2	517	450	472	337	1	......	1885	Graduation from training school.
Lake Mills	1,672	71	2	57	175	37	4	(1)	1	517	......	......	......	2	Yes	(1)	(1)
Laona	(1)	......	1	39	180	28	4	6	1	540	450	......	......	2	Yes	1910	Diploma from kindergarten course.
Linden	580	24	1	10	180	6	4	(1)	1	405	......	......	......	2	Yes	(1)	Normal training.
Little Chute	1,354	58	1	58	196	48	4	6	1	350	......	......	......	1	......	1900	Second or third grade certificate.
Madison	25,531	1,097	9	284	182	[4] 213	4	(2)	5	600	550	350	240	2	Yes	1894	Graduation from approved kindergarten training school.
Manitowoc	13,027	560	12	350	196	290	4	6	6	650	500	......	......	2	Yes	(1)	**Graduation from good kindergarten course.**
Marinette	14,610	628	12	344	190	235	4	6	6	542	432	190	......	2	Yes	[4] 1898	Training-school graduation.
Marion	798	33	1	39	178	26	4	(2)	1	450	......	......	......	2	Yes	(1)	State requirements.
Markesan	892	38	1	17	176	10	4	(2)	1	540	......	......	......	2	Yes	1903	Normal school.
Marshfield	5,783	248	1	62	187	42	(1)	(1)	2	570	475	285	190	2	Yes	1900	Graduation from normal training school.
Mattoon	868	37	1	39	177	18	4	6	1	450	......	......	......		Yes	1910	Normal-school training.
Mauston	1,701	73	2	43	176	20	4	6	1	450	450	......	......		Yes	1900	Normal kindergarten course.
Mayville	2,282	98	2	60	190	35	4	6	1	475	475	(5)	(5)	2	Yes	1910	Graduation from normal kindergarten training school.
Medford	1,846	79	2	65	190	45	4	7	2	570	570	......	......	2	Yes	1896	**State certificate.**
Mellen	1,833	78	2	55	180	48	4	6	1	540	450	......	......	2	Yes	1904	**Graduation from normal kindergarten training school.**

Menosha	6,081	261	6	156	190	108	4	6	5	550	200	300	200	2	Yes	1889	**Graduation from kindergarten training school.**
Menomonie	5,036	216	2	150	180	[4] 135	4	6	2	630	450	......	......	2	Yes	1893	Normal kindergarten training.
Menomonee Falls	919	39	1	[6] 11	174	[4] 8	4	(2)	1	562	......	......	......	2	Yes	1910	Normal-school graduation.
Merrill	8,689	373	8	275	176	187	4	6	4	495	405	270	270	2	Yes	(1)	Graduation from kindergarten school.
Milwaukee	373,875	16,076	114	7,625	197	3,679	4	6	117	960	540	780	540	2	Yes	(1)	Normal-school kindergarten course.
Mineral Point	2,925	125	2	60	178	50	4	6	2	495	......	......	......	2	Yes	(1)	Normal or first-grade diplomas.
Montello	1,104	47	2	44	180	24	4	6	1	495	......	......	......	2	Yes	1906	Graduation from approved school.
Neenah	5,734	246	6	159	185	[4] 69	4	6	6	525	450	250	100	2	Yes	1898	Graduation from normal-school course.
Nekoosa	1,570	67	1	56	190	40	4	6	2	570	380	380	285	2	Yes	1906	Special kindergarten training.
Neshkoro	379	15	1	26	180	16	4	6	1	405	315	......	......	2	Yes	1907	None.
New Glarus	708	30	1	37	180	18	4	6	1	450	......	......	......	2	Yes	1891	Normal-school graduation.
New London	3,383	145	2	70	180	53	4	7	2	495	450	180	135	1	....	(1)	Normal training, kindergarten course.
New Richmond	1,988	85	1	55	177	35	4	6	2	675	450	585	315	1	....	1901	Graduation from kindergarten normal.
Niagara	(1)	....	1	102	190	85	4	7	1	475	475	......	......	2	Yes	1903	Normal-kindergarten diploma.
North Milwaukee	1,860	79	1	34	200	26	4	(2)	1	768	510	......	......	1	....	1897	Graduation from kindergarten department.
Oconto	5,629	241	4	135	180	[6] 90	5	6	2	585	585	225	225	1	....	(1)	(1)
Oconto Falls	1,427	61	2	120	178	43	4	6	2	382	360	......	......	2	Yes	(1)	County certificate.
Oregon	712	30	1	30	180	145	4	6	1	450	405	......	......	2	Yes	1906	Normal-school training.
Oshkosh	33,062	1,421	22	834	195	575	4	(2)	25	525	450	400	[5] 150	2	Yes	1896	High-school graduation; 2 years' professional course.
Phillips	1,948	83	1	91	178	65	4	6	2	450	......	180	......	2	Yes	1895	High-school graduation; normal or college.
Plymouth	3,094	132	2	72	175	45	4	6	2	585	......	225	......	2	Yes	1895	Normal graduation.
Port Edwards	758	32	1	40	180	24	4	6	1	585	495	......	......	2	Yes	1910	Normal school.
Port Washington	3,792	162	2	43	200	37	4	6	2	550	450	......	......	2	Yes	1900	Graduation from normal-training course.
Racine	38,002	1,634	20	729	190	539	4	6	18	700	450	500	400	2	Yes	1893	High-school graduation; 2 years' training.
Readstown	515	21	1	73	177	43	5	(1)	1	405	......	......	......	(1)	....	(1)	(1)
Redgranite	1,521	65	4	108	177	62	4	(2)	1	450	......	......	......	2	Yes	1910	County certificate; normal primary credits.
Reedsburg	2,615	112	2	45	179	30	4	6	2	495	405	90	45	2	Yes	(1)	Normal-school kindergarten course.
Rhinelander	5,637	242	4	114	177	88	4	6	2	540	450	......	......	2	Yes	(1)	Normal college.
Rib Lake	1,018	43	1	32	180	18	4	6	1	495	450	......	......	1	....	1900	Normal credits.
Rice Lake	3,968	170	3	115	178	75	4	6	2	495	450	......	......	[7] 1	Yes	1905	Graduation from training course.
Richland Center	2,652	113	4	87	180	65	4	6	2	540	495	......	......	2	Yes	1884	Graduation from normal school.
Schofield	889	37	1	74	180	56	4½	(2)	1	405	405	......	......	2	Yes	1910	Normal-school training.
Shawano	2,923	125	2	86	180	71	4	6	1	450	......	......	......	2	Yes	1900	Do.
Sheboygan	26,398	1,135	16	756	196	575	4	6	21	600	400	450	400	2	Yes	1886	Graduation from kindergarten training school.
Sheboygan Falls	1,630	70	1	98	195	68	4	6	2	475	380	380	......	2	Yes	(1)	Normal-school certificate, or equivalent.
South Milwaukee	6,092	261	2	77	200	50	4	6	1	600	480	......	......	2	Yes	1907	Normal-school graduation.
Spooner	1,453	62	1	62	180	33	4	6	1	450	......	......	......	2	Yes	1909	Do.
Stevens Point	8,692	373	6	191	190	[6] 150	4	6	4	498	427	......	......	2	Yes	(1)	(1)
Stoughton	4,761	204	2	117	180	58	4	6	2	540	450	495	450	1	....	[4] 1902	Graduation from normal school.
Sun Prairie	1,119	47	1	30	180	14	4	6	1	540	450	......	......	1	....	1907	Normal-school graduation.
Superior	40,384	1,736	18	1,037	186	518	4	6	21	760	570	617	432	2	Yes	1889	Graduation from kindergarten training course.
Tomahawk	2,907	124	1	94	180	84	4	6	2	495	......	225	225	2	Yes	[4] 1902	Normal-school graduation.
Tomoh	3,417	146	2	57	180	26	4	7	1	495	......	......	......	2	Yes	1907	Do.

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[1] No data.
[2] Not fixed; depends on development.
[3] For musician.
[4] Approximate.
[5] Cadets from training school.
[6] Estimated.
[7] In some cases two sessions.

TABLE 5.—*Statistics of public-school kindergartens for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census of 1910.	Estimated population of kindergarten age.	Public-school kindergartens.	Children enrolled in public-school kindergartens.	School year in days.	Average daily attendance.	Age children may enter kindergarten.	Age children must leave kindergarten.	Kindergarten teachers.			Assistant kinnergarten teachers.		One or two sessions a day.	Same teacher in both sessions.	Public-school kindergarten established.	Preparation required of kindergarten teachers.
									Number.	Maximum salary.	Minimum salary.	Maximum salary.	Minimum salary.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
WISCONSIN—contd.																	
Two Rivers	4,850	208	2	142	198	103	4	6	3	$700	$500	$450	$200	2	Yes	1876	Graduation from State normal, or equivalent.
Viroqua	2,059	88	1	58	180	33	4	6	1	495	495	......	......	2	Yes	1904	Normal-school kindergarten training course.
Waukesha	8,740	375	4	173	180	98	4	6	4	500	475	275	200	1	....	1908	Normal-kindergarten course.
Waupaca	2,789	119	2	75	180	65	4	6	1	522	......	......	......	2	Yes	1910	Special normal course.
Waupun	3,362	144	2	65	190	60	4	6	2	600	500	300	200	2	Yes	(1)	(1)
Wausau	16,560	712	7	554	180	350	4	(2)	14	540	450	135	135	2	Yes	1898	Normal-school graduation.
Wausaukee	1,675	71	1	48	180	26	4	(2)	1	450	450	......	......	......	Yes	1903	Normal-school graduation, kindergarten department.
Wauwatosa	3,346	143	1	125	183	59	4	8	2	700	500	550	450	2	Yes	(1)	Normal training.
West Allis	6,645	285	6	219	200	112	4	6	3	600	500	......	......	2	Yes	1907	Graduation from approved normal-training school.
Westboro	(1)	....	1	[3] 53	179	[3] 30	4	6	1	540	450	......	......	1	....	1906	Normal-kindergarten training.
West De Pere	891	38	2	42	180	[4] 20	4	(1)	2	450	450	......	......	2	Yes	(1)	Normal-school graduation, or equivalent.
West Milwaukee	1,458	62	1	150	200	90	4	6	2	575	450	......	450	2	Yes	1906	Normal-school diploma.
WYOMING.																	
Casper	2,639	113	2	60	195	45	4	6	2	775	750	......	......	2	Yes	1906	Normal graduation.
Lauder	1,812	77	1	32	176	24	5	6	1	675	......	......	......	2	Yes	1910	Two years' special training.
Rawlins	4,256	182	1	50	180	40	5	6	1	720	720	......	......	2	Yes	(1)	Special training.
Thermopolis	1,524	65	1	30	170	17	5	(1)	1	755	......	......	......	2	Yes	(1)	(1)

[1] No data.

[2] Not fixed; depends on development.

[3] Approximate.

[4] Estimated.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912.**

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
ALABAMA.													
Anniston	12,794	550	Free	(1)	1	80	180	[2] 60		2	$450	$64	Two years' kindergarten course.
Birmingham	133,685	5,705	Private	Graymont College Kindergarten.	1	40	175	25	$0.50	1			
Do			Mission	Church of St. Mary's-on-the-Highlands.	1	87	177	39		2	585		Diploma from recognized kindergarten training school.
Do			Private	Margaretta K. Williams Kindergarten.	1	46	170	29	4.00	2			(3)
Fairhope	590	25	....do	School of Organic Education	1	30	155	15		2			
Florence	6,689	287	Association	"Maud Lindsay" Kindergarten.	1	65	127	41		2			(3)
Huntsville	7,611	327	....do	Huntsville Kindergarten Association.	3	[2] 90	175	50		3	540		Two years kindergarten training school.
Lanett	3,820	164	Mill	Lanett Cotton Mills	[4] 1	[5] 125	[5] 180	[5] 40		2	405		
Montgomery	38,136	1,639	Association	Neighborhood House Association.	1	23	190	19		1	500	400	Three years' training.
Shawmut	(3)		Mill	West Point Manufacturing Co.	[4] 1	81	185	16		1	405		
Sheffield	4,865	208	Association	Sheffield Free Kindergarten Association.	1	[5] 25	120	[5] 20					

* In classifying kindergartens in normal schools and colleges, it is difficult to say whether they are public or private institutions. Strictly speaking, they are not public in the sense of being supported by the cities in which they are situated, and yet they are supported by State or county funds. Sometimes a tuition fee is asked. It has been decided therefore to place normal school kindergartens in the table other than public.

[1] Supported by donations.
[2] Estimated.
[3] No data.
[4] Statistics for year ended June, 1913.
[5] Approximate.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
ARIZONA.													
Phoenix	11,134	478	Private	Garden Kindergarten	1	30	[1] 160	[1] 21	$5.00	1			
Truxton Canyon			Indian	Federal Government	1	35	132	33		1	$660		Civil-service examination.
ARKANSAS.													
Fort Smith	29,975	1,288	Private	Miss Denton's Kindergarten	1	15	180	6	3.00	1			
Do			Parochial	Immaculate Conception	2	80	(2)	70		[3] 2			(2)
Helena	8,772	377	Private	Helena Kindergarten	1	32	160	10	3.00	1			
Hot Springs	14,434	620	do	Miss Jane Gray's Kindergarten	1	50	160	12	3.00	1			
Texarkana	5,655	242	Association	Texarkana Kindergarten Association.	1	30	160	18		1	520		Graduation from recognized kindergarten training school.
CALIFORNIA.													
Alameda	23,383	1,005	Mission	Japanese Mission, M. E. Church School.	1	18	271	12		1			
Berkeley	40,438	1,738	Parochial	St. Joseph's Parish	3	120	180	110		[3] 4			Normal-school training.
Coalinga	4,199	180	Private	Miss Robert's Kindergarten	1	20	150	10	[1] 3.00	1			
Fort Bidwell	362	15	Indian	Federal Government	1	20	186	[1] 17		1	600	$600	Civil-service rating.
Fresno	24,892	1,070	Church	Seventh-Day Adventists Church.	1	38	180	[1] 28		2	765	765	Normal-school training.
Hollywood	1,400	60	Private	Mrs. Louise Peck's Kindergarten.	1	30	180	22	6.00	2			
Los Angeles	319,198	13,725	do	Berkeley Hall Junior School Kindergarten.	1	25	245	15	6.00	2			
Do			do	Los Angeles Academy and Maryland School.	1	19	175	12	7.50	1			
Do			Settlement	Neighborhood Settlement	1	70	186	25		[3] 3			(2)
Do			Private	Westlake School for Girls	1	20	170	10	6.00	1			
Do			Association	Japanese Children's Institute	1	40	140	15		2	420	210	Graduation from normal school.

Oakland	150,174	6,457	do	Central Free Kindergarten Association.	1	70	198	35		1	600		Graduation from kindergarten training school.
Do			do	N. Oakland Free Kindergarten Association.	1	35	225	28		2	480	[3] 120	Graduation from high school; graduate in kindergarten training school.
Do			do	W. Oakland Free Kindergarten Association.	1	127	191	48		3	600	[3] 120	Do.
Do			Private	Cottage Hill	1	22	193	8	4.00	1			(2)
Do			do	Miss Merriman's Kindergarten	1	45	195	40	6.00	2			(2)
Pasadena	30,291	1,302	do	Polytechnic Elementary School.	1	8	152	[1] 7	[1] 6.00	1			(2)
Do			do	Broadoaks Kindgergarten	1	35	165	[1] 30	12.00	3			(2)
San Diego	39,578	1,701	do	Westgild School	1	21	175	12	5.00	1			(2)
San Francisco	416,912	18,027	Association	Golden Gate Kindergarten Association.	15	[1] 1,362	282	609		15	720	540	Two years' course.
Do			do	Pioneer Kindergarten Society	2	140	(2)	125		4	[1] 600	[1] 495	Normal-school training.
Do			do	Buford Free Kindergarten Society.	1	50	206	35		2	480	240	Do.
COLORADO.													
Boulder	9,539	409	Private	Froebelian House School	1	9	170	7	5.00	1			(2)
Pueblo	44,395	1,908	Mill	Colorado Fuel and Iron Co	[5] 1	40	180	30		1	540		Graduation from kindergarten training school.
Trinidad	10,204	438	Private	Trinidad Kindergarten	1	32	200	16	2.50	1			(2)
CONNECTICUT.													
Bridgeport	102,054	4,388	Normal	Connecticut Froebel Normal Kindergarten and Primary.	1	22	175	18	4.00	5			(2)
Do			Normal	Smith Froebel Kindergarten	1	42	170	25	6.00	3			(2)
Do			Private	West End Private School	1	15	[1] 200	10	6.00	1			(2)
Danbury	23,502	1,010	Association	Opportunity Club	1	[5] 41	147	24		2	540	360	Kindergarten training.
Hartford	98,915	4,253	Parochial	Parish Schools of Hartford	24	1,678	184	1,311		* 49			Graduation from approved kindergarten training school.
Do			Private	The Little School	1	16	140	11	[1] 10.00				(2)
Milford	4,366	187	do	Miss Warner's Kindergarten	1	6	184	4	4.00	1			
Mystic	4,500	193	do	Miss M. Louise Partridge	1	4	180	4	3.00	1			
New Britain	43,916	1,888	Parochial	St. Andrew's Lithuanian (R. C.).	1	30	[1] 180	[1] 30		1			No special requirement.
New Canaan	3,667	157	Private	Miss Rogers's Kindergarten	1	9	152	5	7.00	1			(2)
New Haven	133,605	5,745	Association	Elm City Free Kindergarten Association.	2	[4] 120	182	[4] 96		4	(2)	(2)	High-school and normal certificate.

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* Teachers are Sisters.
[1] Approximate.
[2] No data.
[3] Practice students in kindergarten training school.
[4] Estimated.
[5] Statistics for year ended June, 1913.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
CONNECTICUT—contd.													
New Haven			Private	Miss Johnston's Kindergarten	1	5	177	5	$6.00	1			(1)
Do			do	Miss Lum's Private School	1	29	159	20	10.00	2			(1)
New Milford	5,010	215	do	Sunny Nook	1	20	170	18	2.50	1			(1)
Norwalk	24,211	1,041	Private	The Froebel Kindergarten	1	18	165	18	5.00	2			
Ridgefield	3,118	133	Free	Ridgefield Kindergarten Association.	1	43	180	28		2	$600	$270	Two years' approved kindergarten training.
South Norwalk	8,968	386	Private	Florence A. McMahon	1	15	180	10	5.00	1			
Stamford	28,836	1,239	Parochial	Holy Name of Jesus	[2]3	118	187	[2]92		[4] *4	500	250	State standard.
Do			Private	Miss Carrie W. Hoyt	1	21	160	16	3.75	2			
Taftville	(1)	(1)	Parochial	Sacred Heart Kindergarten	1	42	180	[2]30		*2			(1)
Wauregan	(1)		do	Sacred Heart of Jesus	1	66	189	[2]50		*1	200		Three years' preparation.
Winsted	7,754	333	Private	Miss Blake's Kindergarten	1	[3]35	171	11	(1)	1			(1)
DELAWARE.													
Wilmington	87,411	3,758	Private	Bouvelard Kindergarten	1	16	165	13	3.00	2			(1)
Do			do	Miss Taylor's Kindergarten	1	22	160	[2]18	5.00	1			(1)
Do			Association	The Provident Society	1	32	164	20		1	360		Graduation from approved kindergarten training school.
Do			Mission	Holy Trinity (Old Swede's)	1	47	181	32		2	360	90	Graduation from high school; graduation from kindergarten training school.
Do			Settlement	People's Settlement	1	[2]40	145	27		2	(1)		Graduation from normal kindergarten training school.
Do			Association	West End Reading Room Association.	1	30	180	20		1	270		Two years' approved kindergarten training school.

Do			Free	Howard School Kindergarten	1	[3]40	200	31		1	350		(1)
Do			do	Rockford Kindergarten	1	30	200	20		1	350		(1)
Do			Private	Miss Alice Seller's School	1	20	92	12	[3]10.00	1			
DISTRICT OF COLUMBIA.													
Washington[5]	331,069	14,235	Free	Kemper Boocck Memorial	1	40	179	30		2	200	200	No fixed rule.
Do			Settlement	Friendly House Association	1	30	110	18		2	(1)		(1)
Do			Association	Mount Vernon Seminary Society.	1	55	170	35		2	520	230	Graduation from normal school.
Do			Settlement	Noel House	1	37	175	12		[6]1	245		Kindergarten training.
Do			Private	Potomac Private School	1	24	149	15	7.00	2			
Do			do	St. Margaret's School	1	20	114	15	7.00	1			
FLORIDA.													
De Land	2,812	120	Private	Miss Fuqua's Kindergarten	1	30	150	[2]20	4.00	1			
Jacksonville	57,699	2,481	Free	Mothers' Clubs, and Mrs. W. W. Cummer.	5	352	160	71		14	480	400	Graduation from kindergarten training school.
Do			Private	Riverside Kindergarten	1	42	160	28	4.00	2			
Do			do	Miss Livingston's Kindergarten.	1	60	160	45	4.00	2			
Do			Mission	Woman's Home Missionary Society of Methodist-Episcopal Church.	1	16	156	[2]12		1	320		Special kindergarten training.
Sanford	3,570	153	Private	The Sanford Kindergarten	1	21	159	13	4.00	1			
GEORGIA.													
Aragon	700	30	Mill	Aragon Mills	[7]1	60	133	24		1	500		
Atlanta	154,839	6,658	Association	Sheltering Arms	3	[2]225	180	160		3	500	500	Graduation from approved kindergarten training school.
Do			Mission	All Saints Church	1	56	180	30		1	450	360	Two years' training in approved school.
Do			do	Methodist Episcopal Church	1	56	180	30		1	450	360	Do.
Do			Private	Highland Avenue Kindergarten.	1	14	240	8	4.00	1			
Do			Association	Atlanta Free Kindergarten Association.	3	200	180	105		3	450	360	Two years' training in approved school.
Do			Free	The Jewish Alliance	1	44	180	25		2	360		
Do			Private	Miss Wilder's Kindergarten	[7]1	30	158	15	4.00	2			
Do			Mill	Exposition Cotton Mills	[7]1	65	200	31		2	[3]600		
Augusta	41,040	1,764	Free	The Haines School Kindergarten.	1	56	(1)	42		2			

* Teachers are Sisters.

[1] No data.

[2] Estimated.

[3] Approximate.

[4] Lay teachers assist.

[5] Including all in the District.

[6] Also practice-students in kindergarten training school.

[7] Statistics for year ended June, 1913.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
GEORGIA—continued.													
Chattahoochee	(1)		Mill	Whitten Mills Co.	[2] 1	21	[3] 200	9		1	$720		
Columbus	20,554	883	do	Bibb Manufacturing Co. and Perkins-Massey Hosiery Co.	[2] 2	60	180	45		3	530		Graduation from kindergarten normal school.
Do			Association	Free Kindergarten Association.	2	65	160	55		3	280	$240	Two years in kindergarten training school.
Do			Mill	Eagle & Phoenix Mills	[2] 2	75	180	[4] 60		3	405		Graduation from kindergarten normal school.
Dalton	5,324	228	Free	Free Kindergarten	1	50	160	22		1	320		Course in kindergarten normal school.
Elberton	6,483	278	Private	Elberton Kindergarten	1	10	[3] 160	8	$2.50	1			
Gainesville	5,925	254	do	Beulah Rucker's Institute	1	113	180	60	.50	2			
Jewell	500	21	Mill	Bowen Jewell Co.	[2] 1	60	100	55		2	[3] 520	[3] 320	
La Grange	5,587	240	Settlement	Mill owners, Protestant Episcopal Church.	1	82	200	[4] 60		1	715		Graduation from high school; two years in kindergarten training.
Lindale	2,500	107	Mill	Massachusetts Mills in Georgia.	1	58	160	32		2	675		
Macon	40,665	1,748	Association	Macon Free Kindergarten Association.	2	60	165	46		4	240	120	Two years' course.
Rome	12,099	520	Private	Miss Mary Veal's Kindergarten.	1	25	200	20	3.00	2			
Sandersville	2,641	113	Association [6]	Kindergarten Association	1	26	178	18		1	405		
Savannah	65,064	2,797	do	Savannah Association of Jewish Women.	1	30	156	24		1	[3] 360		
Do			do	Kate Baldwin Free Kindergarten Association.	3	150	170	135		6	720	240	Graduation from high school; graduation from approved kindergarten training school.
Do			Private	The Savannah Kindergarten	1	[4] 35	161	[4] 25	6.00	2			
West Point	1,906	81	Mill	West Point Manufacturing Co.	[2] 1	48	186	28		1	405		

IDAHO.												
Boise	17,358	746	Private	St. Margaret's School	1	40	180	30	3.50	1	....	....
Fort Hall	(¹)	....	Indian school	Federal Government	1	28	200	21	....	1	660	....	Civil service examination.
Twin Falls	5,258	225	Private	Presbyterian Church	1	25	80	18	5.00	1	....	....
ILLINOIS.												
Alton	17,528	753	Mission	Cherry Street Baptist Church	1	57	165	35	....	2	³ 450	³ 270
Cairo	14,548	625	Private	Mrs. Strang's Kindergarten	1	14	140	10	4.00	1	....	....
Champaign	12,421	534	do	West Side Park Kindergarten	1	24	170	18	3.00	1	....	....
Chicago	2,185,283	93,967	Mission	Armour Institute	1	70	³ 180	50	....	3	(¹)	(¹)
Do	....	....	Association	Bethlehem Day Nursery	1	49	192	15	....	1	180	....
Do	....	....	do	Chicago City Mission Society	3	³ 253	291	³ 168	....	4	(¹)	(¹)
Do	....	....	....	Chicago Ethical Culture Society.	1	55	185	30	....	1	(¹)	(¹)
Do	....	....	Private	Chicago Latin School	1	28	165	16	10.00	1	....	....
Do	....	....	Mission	Chicago Hebrew Institute	1	212	³ 250	60	....	4	....	....
Do	....	....	Private	Christ Church Kindergarten	1	50	160	25	5.00	2	....	....
Do	....	....	Association	Chicago Home for Friendless	1	141	187	16	....	1	400	....
Do	....	....	do	Children's Memorial Hospital	2	⁴ 95	313	⁴ 45	....	2	660	540
Do	....	....	Mission	Central Church	2	126	200	100	....	2	650	600
Do	....	....	Private	Chicago Beach Hotel Kindergarten.	1	29	154	15	5.00	1	....	....
Do	....	....	Orphanage	Chicago Orphan Asylum	1	40	180	30	....	1	500	....
Do	....	....	Settlement	Chicago Commons	1	120	200	50	....	1	650	....
Do	....	....	Free	Doremus Kindergarten	1	⁴ 60	192	37	....	2	500	250
Do	....	....	Settlement	Emerson Settlement House	1	40	180	27	....	1	500	....
Do	....	....	do	Eli Bates House	1	63	134	44	....	1	540	....
Do	....	....	do	Fellowship House Settlement	1	40	224	25	....	1	500	....
Do	....	....	Association	First Presbyterian Kindergarten Association	1	40	190	30	....	1	750	....
Do	....	....	Private	Francis W. Parker	1	30	177	15	8.33	3	....	....
Do	....	....	do	Grand Boulevard Hall Kindergarten.	1	55	185	26	5.00	3	....	....

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[1] No data.
[2] Statistics for year ended June, 1913.
[3] Approximate.
[4] Estimated.
[5] Supported partly by association and partly by board of education.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
ILLINOIS continued.													
Chicago			Private	Gladstone Hotel Kindergarten.	1	100	195	25	[1] $5.00	1			
Do			do	Hyde Park Presbyterian Church.	1	85	176	30	[1] 1.00	1			
Do			Association	Home for Jewish Friendless	1	35	190	30		2	$360		Graduation from kindergarten training school.
Do			Mission	Hyde Park Baptist	1	112	230	34		1	750		Affiliated with kindergarten training school.
Do			do	Italian Methodist Episcopal Kindergarten	1	100	180	55		1	450		
Do			do	Immanuel Presbyterian Church.	1	90	200	60		[2] 1	585		Graduation from approved kindergarten training school.
Do			Association	Jewish Training School	1	151	186	106		2	760	$650	Do.
Do			Mission	Jefferson Park Presbyterian Church.	1	58	176	25		1		500	Graduation from high school; 2 years in training school.
Do			Private	Kenwood Institute and Loring School.	1	25	155	14	7.50	1			
Do			do	Lake View Institute Kindergarten.	1	13	200	10	5.00	1			
Do			do	Miss Lovett's Kindergarten	1	27	166	20	6.00	2			
Do			Association	Mary Crane Nursery	1	[3] 35	180	20		1	400		Graduation from approved kindergarten training school.
Do			do	Margaret Etter Crèche	1	65	203	21		1	660	660	Three years' kindergarten training.
Do			Mission	Mennonite Home Mission	1	50	186	25		1	360		Graduation from high school; graduation from kindergarten training school.

Do.			Settlement.	Northwestern University Settlement.	1	45	177	33		1	720	540	Graduation from approved training school.
Do.			Mission.	Olivet Institute.	1	90	270	55		1	495		Graduation from kindergarten college.
Do.			Private.	Stickney School.	1	59	190	38	7.50	[4] 1			
Do.			do.	Sheridan Park Kindergarten.	1	105	190	40	5.00	1			
Do.			Association.	St. Luke's Hospital Kindergarten.	1	[3] 45	313	20		1	[1] 720		Graduation from approved kindergarten training school.
Do.			Mission.	St. Alban's Kindergarten.	1	22	185	10		1	600	280	Graduation from kindergarten college.
Do.			Private.	The Faulkner School.	1	52	165	38	[3] 8.00	2			
Do.			do.	University Elementary School.	1	35	170	17	[1] 2.00	2			
Do.			Settlement.	University of Chicago Settlement Kindergarten.	1	45	175	35		1	700	700	Graduation from approved kindergarten training school.
Do.			Private.	University School for Girls.	1	20	157	12	10.00	2			
Do.			do.	Washington Park Kindergarten.	1	66	192	[1] 30	4.00	1			
Do.			Mission.	W. Presbyterian S. and Ch. Extension Board.	1	105	190	63		1	750	500	Three years' kindergarten training.
Evanston.	24,978	1,074	Private.	Evanston Private Kindergarten.	1	52	161	20	6.00	3			
Do.			Mission.	First Presbyterian Church.	1	50	170	30		1	360		Graduation from high school; 2 years' kindergarten training.
Galesburg.	22,089	949	Association.	Galesburg Free Kindergarten Association.	1	56	180	30		1	[1] 500	[1] 300	Two years' kindergarten training experience.
Do.			Private.	Bateman Kindergarten.	1	55	175	44	([6])	1			
Geneseo.	3,199	137	do.	Miss Luther's Kindergarten.	1	30	180	25	([6])	1			
Highland Park.	4,209	180	do.	Highland Park Kindergarten.	1	35	165	25	6.00	2			
Jacksonville.	15,326	659	Association.	Jacksonville Free Board.	1	65	[1] 180	35		1	585		Three years in kindergarten training school.
Joliet.	34,670	1,490	Private.	Miss Alma Fleischer.	1	30	187	20	5.00	2			
Kankakee.	13,986	601	do.	Froebel Kindergarten.	1	33	185	11	2.00	1			
Lincoln.	10,892	468	do.	Lincoln Private Kindergarten.	1	27	180	15	4.00	[2] 1			
Normal.	4,024	172	Orphanage.	Illinois Soldiers' Orphans' Home.	1	25	250	25		1	600		Civil service examination.
Oak Park.	19,444	836	Private.	Third Congregational Church.	1	56	178	35	2.00	1			
Do.			Association.	Oak Park Kindergarten Association.	2	92	[1] 195	55	([5])	3	600	150	
Do.			Private.	Emerson School Kindergarten.	1	30	184	20	3.00	2			
Ottawa.	9,535	409	do.	Miss Caton's Kindergarten.	1	22	154	15	2.50	1			
Quincy.	35,578	1,573	Parochial.	St. Francis' School.	1	63	180	42	([5])	1			

[1] Approximate.

[2] Also practice-students in kindergarten training school.

[3] Estimated.

[4] Practice-students in kindergarten training school.

[5] Small weekly fee.

[6] No data.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
ILLINOIS—continued.													
Quincy			Parochial	St. John's Parish	1	45	196	36		*1			Special training; music.
Riverside	1,702	73	Association	Kindergarten Extension Association.	3	90	230	81		10	$1,000	$400	Kindergarten training school graduation.[1]
INDIANA.													
Anderson	22,476	966	Free	Anderson Free Kindergarten	[2] 2	234	177	45		2	585	585	Graduation from standard college kindergarten work.
Goshen	8,514	365	Private	Goshen Kindergarten	1	25	240	20	$3.00	1			
Hartford City	6,187	265	do	Seventh Day Adventist Church School.	1	[3]23	160	18		1			
Indianapolis	233,650	10,046	do	Miss Hinson's Kindergarten	1	41	190	20	[3]4.00	1			
Do			do	Jackson Kindergarten and Model School.	1	208	187	74	1.00	2			
Do			do	The Woodruff Kindergarten	1	20	[3]160	15	4.00	2			
Do			Association	Indianapolis Free Kindergarten and Children's Aid Society.	32	3,200	160	1,200		32	750	([4])	
Jeffersonville	10,412	447	Private	Miss Loomis's Kindergarten	1	18	170	17	2.00	1			
Lafayette	20,081	863	Parochial	St. Lawrence	1	57	184	47		*1	[5] 175		State requirement and kindergarten training.
Do			Free	Lafayette Free Kindergarten and Industrial School.	3	175	178	25		2	585	540	High school graduation; kindergarten, normal and experience.
Muncie	24,005	1,032	Association	Muncie Free Kindergarten Association.	[2] 8	190	180	145		10	810	72	Graduation from high school; special kindergarten experience.

IOWA.													
Burlington	24,324	1,045	Private	Miss Kelley's Kindergarten	1	10	182	6	4.00	1			
Clarinda	3,832	164	....do	Miss Inez Welch	1	[3]25	(4)	[3]18	4.00	1			
Davenport	43,028	1,850	Settlement	West Side Settlement	1	60	200	35		3	500	120	High school graduate; kindergarten training.
Do			Association	Davenport Friendly Society	1	22	193	[3]20		1	500		Graduation from approved training school.
Dubuque	38,494	1,655	Parochial	St. Patrick's Parish	2	100	200	90		*2	250		Special training at Mother House.
Keokuk	14,008	602	Private	Miss Bancroft's Kindergarten	1	25	184	[3]20	[3]3.00	1			
Do			Free	Free Kindergarten	1	[3]72	190	24		1	(5)	(6)	Two years' kindergarten training.
Mason City	11,230	482	Private	Mrs. Willson's Kindergarten	1	40	159	20	2.00	1			
Oelwein	6,028	258	Parochial	Sacred Heart Parish	1	46	190	38		*1	(7)		(6)
KANSAS.													
Emporia	9,058	389	Normal	Kindergarten of Kansas State Normal.	1	75	174	28	.40	1			
Eureka	2,333	100	....do	Mrs. Moonlight's Kindergarten.	1	14	100	12	2.00	1			
Kansas City	83,331	3,583	Parochial	St. Thomas Parish	1	96	200	75		*1	(7)		State certificate and Catholic school board.
Lawrence	12,374	532	Private	Froebel Kindergarten	1	30	200	18	6.00	1			
Leavenworth	19,363	832	....do	Miss Farrell's Kindergarten	1	15	180	12	4.00	1			
Liberal	1,716	73	Mission	Liberal Free Kindergarten	1	15	30	4	(8)	1			None.
Manhattan	5,722	245	Private	Anna Fairman's Kindergarten	1	22	118	15	4.00	1			
Osborne	1,566	67	....do	The Osborne Kindergarten	[9]1	17	138	17	[3]1.50	2			
Ottawa	7,650	328	....do	Seventh Day Adventist Church.	1	30	160	[3]28	1.50	1			
Topeka	43,684	1,878	....do	Kindergarten of the College of the Sisters of Bethany.	1	[3]43	168	[3]27	3.00	2			
Wichita	52,450	2,255	Association	Associated Charities	1	27	311	10		1	[3]385		University course.
KENTUCKY.													
Ashland	8,688	373	Private	Miss Martin's Kindergarten	1	24	170	15	3.00	1			
Bowling Green	9,173	394	Normal	Western Kentucky State Normal.	1	24	20	16		2			
Georgetown	4,533	194	Private	Georgetown Kindergarten	1	18	180	10	2.00	1			
Louisville	223,928	9,628	....do	Kentucky Home School for Girls.	1	25	164	13	(6)	1			Graduation from kindergarten training school.

* Teachers are Sisters.

[1] Experience also required.

[2] Supported partly by association and partly by board of education.

[3] Approximate.

[4] Practice students in kindergarten training school.

[5] Room, board, laundry in addition to salary.

[6] No data.

[7] Services given.

[8] Small weekly fee.

[9] Taken over by public school 1912-13.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
KENTUCKY—contd.													
Louisville			Private	Highland Kindergarten	1	24	158	15	$5.00	1			
Do			Association	Masons of Kentucky	1	45	250	32		1	$600		Graduation from kindergarten training school.
Morehead	1,105	48	Private	([1])	1	40	170	25	([1])	1			
Paducah	22,760	978	Mission	Grace Episcopal Church	1	24	160	15		1	[2] 440		Graduation from approved school.
LOUISIANA.													
Baton Rouge	14,897	640	Private	Live Oak School	1	106	[2] 200	40	.50	1			
New Orleans	339,075	14,580	Association	New Orleans Free Kindergarten Association.	3	218	[2] 189	84		6	[2] 350	[2] $250	Normal kindergarten course.
Do			Settlement	Kingsley House	1	64	160	33		1			
Do			Private	Kindergarten department Newman Manual Training School.	1	25	165	[2] 23	3.25	2	800	450	
Shreveport	28,015	1,204	do	Tomkies Kindergarten	1	35	231	34	4.00	1			
MAINE.													
Bangor	24,803	1,066	Private	The Somerset Private Kindergarten.	1	22	174	13	[2] 6.00	2			
Bar Harbor	2,500	107	do	Bar Harbor Kindergarten	1	79	68	31	1.00	2			
Do			Association	Bar Harbor Kindergarten Association.	1	68	195	31		2	888	[2] 555	Graduation from kindergarten training school.
Calais	6,116	262	Private	Miss Hind's School	1	16	176	14	3.00	1			
Lewiston	26,247	1,128	do	"The Hawthorne"	1	12	168	10	6.00	1			
North East Harbor	350	15	do	North East Harbor Kindergarten.	1	25	150	20	1.00	2			
Rockland	8,174	351	do	Fiske Manning	1	25	180	12	2.00	2			

MARYLAND.													
Baltimore	558,485	24,014	Private	Calvert School Pre-school Class.	1	30	160	24	[3] 7.50	2			
Do			do	Kindergarten department of Park School.	1	25	160	18	6.25	2			
Do			do	Friends' School	1	[2] 24	147	[2] 20	6.25	2			
Do			Mission	Mt. Vernon Place Methodist Church.	1	125	158	70		3	550	300	Two years training school.
Do			do	Mount Tabor Bohemian Methodist Episcopal Church Institute.	1	92	185	[3] 84		1	(1)	(1)	Graduation from kindergarten training school.
Do			do	St. Paul's Chapel	1	92	170	60		2	150	100	Do.
Do			Settlement	Lawrence House Settlement	1	57	168	45		2	500	300	Do.
Do			Mission	Grace Church Free Kindergarten.	1	66	200	[2] 50		2	(1)	(1)	Do.
Do			do	The Bishop Paret Memorial	1	120	166	64		3	300	150	Two years theoretical training.
Do			do	Grace and St. Peters Protestant Episcopal Church.	1	67	156	40		2	350	150	Two years kindergarten training.
Do			Association	Kindergarten Guild, Roland Park.	1	63	[2] 180	38		1	304	40	Graduation from kindergarten school.
Cumberland	21,839	939	Private	Craigie Hall Private School	1	48	182		1.25	1			
Frederick	10,411	447	Free	Frederick Free Kindergarten	1	78	160	42		2	200	80	(1)
Hagerstown	16,507	709	Mission	Day Nursery Kindergarten	1	18	160	[2] 15		1	(1)	[2] 340	(1)
Port Deposit	1,394	59	Free	Jacob Tome Institute Kindergarten.	1	30	164	20		2	(1)		(1)
MASSACHUSETTS.													
Beverly	18,650	801	Private	Miss Studley's Kindergarten	1	21	170	[2] 16	2.50	1			
Boston	670,585	28,835	Association	Hale House Association	1	35	184	25		1	600	400	Graduation from kindergarten training school.
Do			Settlement	Jamaica Plain Neighborhood House.	1	22	138	10		1	(4)		
Do			Free	Morgan Memorial	1	24	160	11		1	(4)		
Do			do	North Bennet Street Day Nursery.	1	[2] 35	165	28		1	320		Graduation from kindergarten training school.
Do			Mission	Hope Chapel Kindergarten	1	40	181	24		1	540		Graduation from high school; graduation from kindergarten training school.
Do			Private	Miss Woodward's School	1	27	142	16	9.00	2			
Do			Settlement	Elizabeth Peabody House Settlement.	1	68	[2] 180	55		2	800	300	High school and normal school training.
Do			do	Settlement Kindergartens	2	159	165	[2] 120		4	400		(1)
Do			Private	Mrs. Leatherbee's Kindergarten.	1	9	148	6	12.50	2			

[1] No data.
[2] Approximate.
[3] Estimated.
[4] Practice students in kindergarten training school.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
MASSACHUSETTS—contd.													
Brockton	56,878	2,445	Association	Brockton Day Nursery Association.	1	30	50	20		1	$100		Graduate teacher.
Do			Private	Miss Cooper's Kindergarten	1	20	209	[1] 18	$6.00	2			
Do			Parochial	Sacred Heart	1	80	186	60		*2	(2)		
Cambridge	104,839	4,508	Private	Miss Rogers's Kindergarten	1	18	171	14	8.75	1			
Chestnut Hill			do	Chestnut Hill Kindergarten	1	12	162	9	7.33	2			
Danvers	9,407	404	do	Mrs. Weston's Kindergarten	1	14	172	10	4.00	1			
Fall River	119,295	5,129	do	Miss Brown's Kindergarten	1	18	173	12	6.00	1			
Fitchburg	37,826	1,626	Normal	Edgerly School Kindergarten	1	45	195	35		1	600		(3)
Jamaica Plain			Private	Kindergarten for Blind	1	140	221	125	3.00	1			
Leominster	17,580	755	Parochial	St. Cecilia's Parish	1	107	180	62		*1	90		Same as primary grades.
Lexington	4,918	211	Private	Miss Richardson's Kindergarten.	1	12	200	10	5.00	1			
Lynn	89,336	3,841	do	Miss Alice L. Cate Kindergarten.	1	18	172	9	[1] 5.50	1			
Malden	44,404	1,909	do	Miss Grace Fifield's Kindergarten.	1	12	187	10	6.00	1			
Melrose	15,715	675	do	Miss Pray's Kindergarten	1	12	158	10	5.00	1			
Newton Center	3,500	150	do	Miss Ellis's Kindergarten	1	8	155	4	[1] 7.50	1			
Plymouth	12,141	522	do	Miss Thurber's Kindergarten	1	12	165	9	4.00	1			
Do.			Mill	Plymouth Cordage Co	1	78	[4] 180	45		2	(2)		Normal training.
Quincy	32,642	1,403	Association	Commission of 15 Wollaston ladies.	1	48	180	24		1	500	$500	Graduation from kindergarten training school and experience.
Somerville	77,236	3,321	Private	Spring Hill Private Kindergarten.	1	24	176	17	4.00				
Spencer	6,740	289	Parochial	St. Mary's Parish	1	95	200	66		*1	200		(3)
Springfield	62,059	2,668	Private	Miss Augusta Chapin's Kindergarten.	1	16	[1] 160	[1] 14	[1] 8.00	1			
Wakefield	11,404	490	do	Miss Campbell's Kindergarten	1	9	140	6	4.00	1			

Waltham	27,834	1,196	do	Memorial Kindergarten	1	10	180	9	4.00	1			
Wellesley	5,413	232	Mission	Wellesley Free Kindergarten	1	37	[4]180	28		2	(3)		(3)
West Medford	3,000	129	do	Miss Bearce's Kindergarten	1	12	246	10	4.00	1			
West Newton			do	Miss Sear's Kindergarten	1	17	145	10	12.00	1			
Winter Hill			Private	Miss Alice F. Lyons	1	19	163	15	4.00	1			
Whitman	7,292	313	do	Whitman Private Kindergarten.	1	18	113	14	4.00	1			
Worcester	145,986	6,307	do	The Bancroft School	1	12	170	9	[1]6.25	1			
Do			Parochial	St. Joseph's Parish	1	92	[1]200	[1]85		*2			
MICHIGAN.													
Bay City	45,166	1,942	Parochial	St. Mary's Parish	1	93	180	85		1	200	200	Normal graduation.
Do			do	St. Stainislaus Parish	2	190	250	180		2	250	200	That of Felician Sisters.
Benton Harbor	9,185	394	Private	Benton Harbor College Kindergarten.	1	30	244	25	2.00	1			
Big Rapids	4,519	193	do	Ferris Institute Private Kindergarten.	1	35	186	18	1.00	1			
Detroit	465,766	20,027	Mission	Hungarian Reformed Church	1	82	259	63		2	250	125	
Do			Private	Liggett School Kindergarten	1	32	165	22	20.00	3			
Do			Parochial	Most Holy Redeemer	1	[1]71	199	22		1	200	200	
Grand Rapids	112,571	4,840	Private	Eastman School	1	15	197	10	5.00	1			
Holland	10,490	451	Mission	Christian Primary School	1	49	200	47		1	400		Graduation from kindergarten training school.
Jackson	31,433	1,351	Association	Associated Charities	1	185	191	56		2	450	350	Graduation from approved kindergarten training school.
Kalamazoo	39,437	1,695	Normal	Western State Normal	1	52	166	35		2	480		
Laurium	8,537	366	Parochial	Sacred Heart Parish	1	75	200	70		*2	250		Two years' training.
Saginaw	50,510	2,171	Association	Saginaw Free Kindergarten Association.	2	100	250	70		5	600	400	Graduation from approved kindergarten training school.
Do			Private	Germania Kindergarten	1	86	186	42	1.00	2			
Traverse City	12,115	520	Parochial	Immaculate Conception	1	21	195	19		*1	(3)		
MINNESOTA.													
Crookston	7,559	324	Parochial	St. Anne Parish	1	48	180	31		*2			Kindergarten diploma.
Little Falls	6,078	261	Private	Miss Rhodes' Kindergarten	1	25	168	20	4.00	1			
Mankato	10,365	445	Normal	State Normal School Kindergarten.	1	66	166	32		2	1,200	670	
Minneapolis	301,408	12,096	Mission	Plymouth Congregational Church.	2	150	175	105		2	700	500	Graduation from high school; graduation from kindergarten training school.
Do			do	Westminster Presbyterian Church.	3	312	185	170		7	617	100	Graduation from high school; graduation from kindergarten training school.

* Teachers are Sisters.

[1] Approximate.

[2] Services given.

[3] No data.

[4] Estimated.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
MINNESOTA—continued.													
Minneapolis			Mission	St. Mark's Church	1	105	184	37		1	$500	$500	Graduation from high school; graduation from normal kindergartentrainingschool.
Winona	18,583	799	Normal	Winona's State Normal School.	1	60	180	40	$0.33	2	1,500	900	
MISSISSIPPI.													
Hattiesburg	11,733	504	Private	Hattiesburg Private Kindergarten.	1	[1]22	180	[1]22	3.00	1			
Jackson	21,262	914	do	Miss Bryan's Kindergarten	1	35	150	15	2.50	1			
Laurel	8,465	363	do	Laurel Private Kindergarten	1	[1]22	180	[1]20	3.00	1			
Do			Mill	Laurel Cotton Mills	[2]1	50	220	38		2	525	425	
Meridian	23,285	1,001	Private	Meridian Private Kindergartens.	2	[1]44	180	[1]40	3.00	2			
Do			Parochial	St. Patrick's Church	1	39	203	43		*2	(4)	(4)	Special training. Kindergarten and primary certificate.
Do			do	St. Joseph's Catholic	1	46	193	30		*1	(4)	(4)	
Starkville	2,698	115	Mill	John M. Stone Cotton Mills	[2]1	50	180	30		2	450		
Tupelo	3,881	166	do	Tupelo Cotton Mills	[2]1	24	160	18		1	600		
Vicksburg	20,814	895	Parochial	St. Mary's Catholic Church	1	84	170	40		*1	(4)	(4)	Special training.
Do			Private	Vicksburg Private Kindergarten.	1	[1]22	180	[1]20	3.00	1			
Yazoo City	6,796	291	Mill	Yazoo Yarn Mill	[2]1	29	180	20		1	300		
MISSOURI.													
Carthage	9,483	407	Private	Carthage Kindergarten	1	[1]45	180	[1]30	3.00	2			
Eldon	1,999	85	do	Miss Haswell's Kindergarten	1	16	120	14	2.00	1			
Ferguson	1,658	70	Association	Ferguson Free Kindergarten	1	46	188	22		2	450		
Joplin	32,073	1,379	Private	Library Kindergarten	1	26	210	6	4.00	1			

Do			do	North Heights Kindergarten.	1	21	190	15	5.00	1			
Kansas City	248,381	10,680	Parochial	Our Lady of Perpetual Help	[3] 2	[3] 30	190	20		*[3] 2	[1] 250		Two years' training.
Do			Mission	Central Chapel and Settlement House.	1	68	180	27		1	300		
Do			do	Grace Episcopal Church Kindergarten.	1	77	177	35		3	[1] 500	[1] 235	Two years in kindergarten training school.
Do			do	Jewish Educational Institute.	1	45	240	30		2	360	120	Graduation from kindergarten training school.
Do			do	Kindergarten Finance Club of Institute Church.	1	52	230	21		1	300		Graduation from Kansas City Kindergarten Training School.
Do			do	Swope Center	1	110	230	40		1	385	385	Two years' school and practice work.
Do			Private	Elementary School	1	30	248	10	5.00	1			
Kirksville	6,347	272	Normal	First District Normal School Kindergarten.	1	75	240	40		1			
Lebanon	2,430	104	Private	Miss Warner's Kindergarten	1	8	180	5	4.00	1			
Lexington	5,242	225	Mission	Lexington Kindergarten	1	16	180	9		2	270		High-school graduation and special training. m
Maryville	4,762	204	Normal	State Normal	1	30	[1] 180	15		1	900		High-school graduation and kindergarten training.
St. Louis	687,029	29,542	Mission	Bishop Robertson Hall	1	13	185	10		1	270		
Do			do	Church of the Holy Communion.	1	43	177	25		2	270	225	Graduation from training school.
St. Louis			Parochial	Parochial School System	5	358	190	300		*5	250	250	Required normal course.
Do			Mission	Episcopal Orphans' Home Board.	1	27	220	19		1	250	250	Kindergarten course.
Do			do	Grace Church, Holy Cross House.	1	60	180	40		2	180		Normal-school course.
Do			do	Jewish Educational Alliance	2	180	300	[1] 80		4	330	220	St. Louis kindergarten, normal.
Do			do	Kingdom House Church Settlement.	1	60	160	35		2	240	200	Two years' training.
Do			Private	Miss Pulliam's kindergarten.	1	36	164	[1] 15	5.00	2			
Warrensburg	4,689	201	Normal	State normal school, kindergarten.	1	60	240	28	.25	1	960		
MONTANA.													
Great Falls	13,948	599	Parochial	Pro-Cathedral	1	15	190	13		1	([4])	([4])	Kindergarten training.
NEBRASKA.													
Fremont	8,718	374	Private	Fremont College	1	35	175	26		2			
Kearney	6,202	266	Normal	State normal school	1	20	180	18		2			
Omaha	124,096	5,336	Private	Holyoke-Dox	1	25	180	18	6.50	2			Graduation from kindergarten college or normal school.

*Teachers are Sisters.

[1] Approximate.

[2] Statistics for year ended June, 1913.

[3] Estimated.

[4] Services given.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers. Number.	Kindergarten teachers. Maximum salary.	Kindergarten teachers. Minimum salary.	Preparation required of kindergarten teachers.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
NEBRASKA—continued.													
Peru	950	40	Normal	State Normal School	1	36	180	25		1	$600		
Wayne	2,140	92	do	do	1	20	180	[1] 19		1			
NEVADA.													
Nixon			Indian	Federal Government	1	[1] 35	[2] 180	28		1	600		
NEW HAMPSHIRE.													
Berlin Mills	1,000	43	Free	W. W. Brown Memorial	1	75	180	56		3			
Concord	21,497	924	Private	Miss Bailey's Kindergarten	1	[2] 25	(3)	[2] 18		1			
Franklin	6,132	264	Free	N. H. Orphans' Home	1	32	240	30		1			
Plymouth	2,200	94	Normal	State Normal School	1	[2] 20	180	[2] 18		1	600		
NEW JERSEY.													
Atlantic City	46,150	1,984	Private	Friends Kindergarten	1	24	190	20	$4.00	1			
Boonton	4,930	212	Mission	St. John's Episcopal	1	9	220	8		1	595		High-school graduation; 2 years' kindergarten training.
Bordentown	4,250	183	Parochial	St. Mary's Roman Catholic	1	62	190	40		*1	250		Certificate from recognized system.
Bridgeton	14,209	610	Private	Lakewood Select School	1	24	179	20	2.00	1			
Camden	94,538	4,065	do	Camden Friends Kindergarten.	1	13	157	9	4.00	1			
Collingswood	4,795	205	do	Mrs. Oliver's Kindergarten	1	10	175	9	3.00	1			
East Orange	34,371	1,478	do	Miss Peet's Kindergarten	1	[1] 17	158	15	6.25	1			
Do			Parochial	Our Lady Help of Christians	1	40	190	30		1	250		One year's training.
Elizabeth	73,409	3,156	Settlement	Visiting Nurses Association	1	25	[1] 180	18		1	(4)	(4)	Two years' training.
Do			Mission	All Souls' Unitarian Church	1	[1] 14	160	[1] 10		1	240		Normal-school diploma

Do	....	....	....do	Trinity Episcopal Church	1	37	156	21	....	1	320	....	High-school graduation; kindergarten-training school graduation.
Haddonfield	4,142	178	Private	Bancroft Training School	1	26	[1] 320	[1] 25	....	1	....	....	
Hoboken	70,324	3,024	Parochial	St. Peter and Paul Parish	1	28	230	25	....	1	(3)	....	None.
Do	....	....	....do	St. Joseph's Parish	1	50	180	40	....	*1	225	....	Kindergarten course.
Do	....	....	Private	Hoboken Academy	1	16	177	14	[1] .85	1	....	....	
Jersey City	267,779	11,514	....do	Bergen School for Girls	1	14	155	10	3.33	1	....	....	
Do	....	....	....do	The Crescent Hall School	1	20	182	18	[1] 2.50	2	....	....	
Do	....	....	....do	German-American School	1	27	210	25	2.00	1	....	....	
Long Branch	13,206	572	Parochial	Star of the Sea Academy	1	25	190	[1] 23	....	*1	(4)	....	High school graduation; normal course.
Madison	4,658	199	....do	Madison Academy	1	15	180	10	7.00	1	....	....	
Montclair	21,550	927	Private	Unity Kindergarten	1	35	154	27	[1] 8.00	3	....	....	
Moorestown	3,000	129	....do	Friends High School and Kindergarten.	1	15	182	10	3.50	1	....	....	
Morristown	12,507	537	Association	The Morristown Free Kindergarten Association.	1	75	182	29	....	3	700	$240	Graduation from kindergarten training school; normal training.
Do	....	....	Private	Miss Christine D. Stuphen's	1	[2] 20	[1] 165	[2] 16	7.00	1	....	....	....
New Brunswick	23,388	1,006	Parochial	St. Mary's Home	1	50	150	50	....	1	(4)	(4)	Qualifications primary teachers.
Do	....	....	....do	St. Ladislaus, Hungarian	1	30	255	[1] 28	....	2	250	....	Graduation from St. Peter's Roman Catholic school.
Do	....	....	Association	Dorcas Society and Children's Day Nursery.	1	34	120	15	....	1	100	....	Practical knowledge of kindergarten.
Newark	347,469	14,940	Mission	West Newark Kindergarten	1	40	300	36	....	1	576	420	(5)
New Durham	1,500	64	Parochial	St. Bridget's Parish	1	29	101	22	....	*1	250	....	(3)
Orange	29,630	1,274	Private	Miss Beard's Kindergarten	1	9	190	7	8.75	1	....	....	
Do	....	....	Mission	Day Nursery	1	16	168	10	(3)	(5)	....	....	
Do	....	....	Private	Dearborn Morgan School	1	23	170	18	[1] 9.00	2	....	....	
Do	....	....	Mission	Hurlbut Street Mission	1	75	190	30	....	1	400	....	
Do	....	....	Parochial	Our Lady of Mount Carmel	2	143	(3)	[2] 108	....	*1	350	250	(3)
Passaic	54,779	2,355	Private	Passaic Collegiate School, Kindergarten.	1	13	180	[2] 9	7.50	1	....	....	
Paterson	125,600	5,401	....do	Miss Stile's School	1	22	175	18	4.50	1	....	....	
Do	....	....	Normal	Normal School Kindergarten	1	82	195	38	....	1	....	....	
Do	....	....	Association	North Fourth Street Christian School.	1	23	100	20	....	2	200	....	Not specified as yet.
Plainfield	26,667	1,147	Private	Department of the Hartridge School.	1	21	158	15	[1] 7.50	1	....	....	
Rutherford	7,045	303	....do	Miss Fessenden's Kindergarten.	1	16	160	12	5.00	2	....	....	
Summit	7,500	322	....do	Miss Mueller's Outdoor School	1	16	156	12	10.00	1	....	....	
Trenton	96,815	4,163	Normal	State Normal	1	35	190	20	2.80	1	....	....	
Do	....	....	Mission	Bible Readers' Aid	1	30	160	18	....	1	160	....	No standard.

* Teachers are Sisters.

[1] Approximate.

[2] Estimated.

[3] No data.

[4] Services given.

[5] Practice-students in kindergarten training school.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
NEW MEXICO.													
Albuquerque	11,020	473	Indian	Federal Government	[1] 1	32	199	30		1	$720		Civil service examination.
Do			Private	Miss Philbrick's	[1] 1	31	178	14	$3.75	1			Do.
Mescalero			Indian	Federal Government	[1] 1	22	280	21		1	720	$600	Do.
Santa Fe	5,072	218	do	do	[1] 1	64	200	60		1	720		Kindergarten training.
NEW YORK.													
Albany	100,253	4,310	Parochial	Parochial School System	[1] 6	[2] 180	151	[2] 100		* 6	([3])		Normal or college training.
Buffalo	423,715	18,219	Private	St. Margaret's School Kindergarten.	1	5	240	5	5.00	1			
Do			do	Elmwood School Kindergarten.	1	18	165	14	6.25	2			
Do			do	Franklin School Kindergarten	1	24	158	16	9.36	2			
Do			do	Park School Kindergarten	1	20	160	15	9.36	1			
Corning	13,730	589	do	Froebel Kindergarten	1	11	180	9	4.00	1			
Dobbs Ferry	3,455	148	do	Miss Trube's Kindergarten	1	20	180	16	7.00	2			
Do			Free	The McKinley Free Kindergarten.	1	52	180	48		2	360	184	Graduation from approved kindergarten training school.
Dunkirk	17,221	740	Parochial	St. Mary's Parish	1	26	204	22		* 1	250		Two years' training.
Elmira	37,176	1,595	Association	Elmira Industrial School and Free Kindergarten Association.	3	100	200	[4] 80		2	575	400	Two years' kindergarten training.
Do			Private	Elmira Church School	1	24	200	16	1.00	1			
Do			do	Misses Norton's Kindergarten	1	13	185	10	5.00	1			
Fredonia	5,285	227	Normal	State Normal School	1	61	185	36	.60	2	850		
Geneseo	2,067	88	do	State Normal	1	36	190	24		2	800		College training or equivalent.
Gloversville	20,642	887	Private	Miss Smith's Kindergarten	1	24	196	13	4.00	1			
Hastings on Hudson	4,552	195	do	Miss Worden's Kindergarten	1	18	160	12	6.00	2			

Do.			Free.	New York Orphanage Kindergarten.	1	13	200	12		1			
Herkimer.	7,520	323	Mission.	Folts Mission Institute Kindergarten.	[1] 1	16	146	9	.17	1			
Hudson.	11,417	490	Parochial.	St. Mary's Parish.	1	78	196	65		* 1			
Kinderhook.	698	29	Private.	Kinderhook Kindergarten.	1	12	180	[4] 10	[4] 2.00	1			
Kingston.	25,908	1,113	do.	Froebel Kindergarten.	1	15	180	12	4.00	2			
Larchmont.	1,958	84	do.	Manor School.	1	6	150	4	15.00	1			
Mamaroneck.	5,699	244	Free.	Mamaroneck Free Kindergarten.	1	96	178	42		2	618	450	Graduation from kindergarten training school.
Mount Vernon.	30,919	1,329	Private.	McVickar Kindergarten.	1	38	230	34	[4] 4.00	2			
Do.			do.	Loomis Kindergarten.	1	16	210	14	4.00	1			
New York City.	4,766,883	204,975											
Brooklyn.			Private.	Adelphi Academy.	1	[4] 35	175	25	7.00	2			
Do.			do.	Berkeley Institute.	1	33	171	[2] 25	[4] 8.00	2			
Do.			Association.	Brooklyn Free Kindergarten Society.	20	2,136	191	717		32	750	650	Graduation from high school; graduation from approved kindergarten training school.[5]
Do.			Private.	Brooklyn Friends' School.	1	33	163	[3] 25	11.00	2			
Do.			Association.	Brooklyn Heights Seminary Club.	1	25	170	[3] 20		1	400		Graduation from approved kindergarten training school.
Do.			Private.	Brooklyn Heights Seminary kindergarten.	1	15	160	10	12.00	1			
Do.			Mission.	Emmanuel Baptist Church.	1	58	176	39		1	735		Do.
Do.			do.	Evangelical Lutheran Church of the Messiah.	1	30	155	24		1	320		Do.
Do.			Private.	Froebel Academy.	1	23	164	[4] 17	6.00	2			
Do.			do.	Misses McCreary's School.	1	30	176	[4] 25	[4] 4.50	1			
Do.			do.	Mrs. Perkins's School.	1	18	167	13	4.00	2			
Do.			do.	Pratt Institute Kindergarten.	1	24	164	13	8.00	2			
Do.			Mission.	St. Christopher Kindergarten.	1	66	200	45		1	500	500	Normal-school training.
Do.			do.	Tompkins Avenue Congregational Church.	1	60	200	40		2	[4] 500	[4] 500	Kindergarten teacher's certificate.
Manhattan.			Private.	Alcuin Preparatory School.	1	13	160	[4] 10	[4] 10.00	1			
Do.			Association.	American Female Guardian Society.	13	[4] 1,622	194	[4] 1,400		46	600	300	Graduation from kindergarten training school.
Do.			Mission.	Beth-el Sisterhood.	1	[4] 75	205	31		2	420		Graduation from kindergarten normal school.
Do.			Association.	Brightside Kindergarten and Day Nursery.	1	[4] 250	[4] 265	[4] 195		5	[4] 600	[4] 420	Graduation from kindergarten training school.

* Teachers are Sisters.

[1] Statistics for year ended June, 1913.

[2] Estimated.

[3] Services given.

[4] Approximate.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
NEW YORK—continued.													
New York City—Con. Manhattan	....	....	Mission	Calvary Protestant Episcopal Kindergarten.	1	121	276	87	....	2	[1] $800	....	Graduation from approved kindergarten training school.
Do	....	....	do	Chapel of Intercession (Protestant Episcopal) Kindergarten.	1	100	184	25	....	1	[1] 300	....	Kindergarten normal training school.
Do	....	....	Private	Charlton School	1	10	175	5	[1] $16.00	2	....	....	
Do	....	....	do	Miss Chaires' Kindergarten	1	[1] 20	160	[1] 16	[1] 15.50	1	....	....	
Do	....	....	Association	Children's Aid Society	11	2,436	190	1,042	....	33	770	$480	Graduation from high school; 1 year's experience.
Do	....	....	Mission	Christ Church House	2	105	170	50	....	4	612	405	Two years' kindergarten training; one year's experience.
Do	....	....	Settlement	Clark Neighborhood House	3	225	200	190	....	8	375	125	Two years' approved kindergarten training.
Do	....	....	Mission	Convent of Sacred Heart	1	[1] 75	224	60	....	1	490	240	
Do	....	....	Private	De Lancy School	1	20	152	13	10.50	1	....	....	
Do	....	....	Settlement	East Side Kindergarten	1	72	174	[1] 68	....	2	960	....	Kindergarten training; social service.[2]
Do	....	....	Association	École Maternelle Française	1	100	300	65	....	1	600	360	Kindergarten training; French and English; piano.
Do	....	....	do	Emanuel Sisterhood	1	[3] 55	247	35	....	1	600	....	(4)
Do	....	....	Private	Ethical Culture School	1	34	165	30	7.00	3	975	225	
Do	....	....	Mission	Evangelical Lutheran Zion Church.	1	36	195	29	....	1	250	....	Same as public school.
Do	....	....	Private	Friends' Seminary Kindergarten.	1	29	165	[1] 24	8.00	2	....	....	
Do	....	....	do	Froebel League	1	44	141	20	25.00	4	....	....	

Do.			Mission	Grace Reformed Church	1	62	130	33		[5] 2			**Kindergarten training.**
Do.			Association	Hebrew Day Nursery	1	50	250	34		1	960	720	Two years' kindergarten training.[2]
Do.			Normal	Horace Mann Kindergarten	1	57	156	33	12.50	4			
Do.			Mission	Hunts Point Presbyterian Church.	1	30	200	20		1	400		Same as public school.
Do.			do.	Immanuel Evangelical Lutheran.	1	20	185	[1] 18		1	420		Standard not defined.
Do.			Association	International Sunshine Society	2	30	303	28		2	[6] 350	[6] 250	Graduation from kindergarten training school.
Do.			Mission	John Hall Memorial	1	[1] 43	290	35		2	180	240	Do.[2]
Do.			do.	Mizpah Chapel	1	55	260	30		2	675	450	Certificate from kindergarten training school.
Do.			do.	New York Turn Verein	1	30	200	20		1	(4)	(4)	(4)
Do.			Association	New York Kindergarten Association.	40	3,044	192	1,600		80	1,250	550	High-school graduation; kindergarten training school graduation.[7]
Do.			Mission	St. Bartholomew's Kindergarten.	4	250	220	175		9	700	500	Two years in approved kindergarten training school.
Do.			do.	St. Luke's Chapel (Protestant Episcopal).	6	96	192	38		3	800	250	Kindergarten training-school graduation.
Do.			do.	St. Matthew's Lutheran	1	37	180	25		1	600		Course in kindergarten normal.
Do.			Private	St. Michael's School	1	20	140	19	[1] 20.00	2			
Do.			Mission	St. Paul's Chapel (Trinity)	1	[1] 55	176	26		1	810	450	Kindergarten training school graduation.
Do.			do.	St. Peter's Lutheran	1	23	155	17		1	240		Graduation from kindergarten normal.
Do.			do.	St. Thomas Kindergarten	1	24	246	21		1	240		Graduation after 2 years' kindergarten training.
Do.			Normal	Speyer School	1	40	160	35		2			
Do.			Mission	University Place Presbyterian	1	50	180	20		1	600		High-school graduation; kindergarten training school gradtion.
New Rochelle	28,867	1,241	Private	New Rochelle School and Kindergarten.	1	26	182	20	6.00	2			
Do.			do.	Mrs. Beckwith's Kindergarten	1	40	168	36	[1] 7.00	1			
Niagara Falls	30,445	1,309	Parochial	Sacred Heart Parish	1	49	176	40		* 1	250		Special kindergarten training.
Ossining	11,480	493	Private	The Ossining School	1	12	170	10	6.25	1			
Oswego	4,633	199	do.	The Castle Kindergarten	[8] 1	17	165	15	5.00	1			
Peekskill	15,245	655	do.	Miss McDonald's School	1	22	186	16	2.80	1			
Do.			do.	Miss Angell's Kindergarten	1	21	200	11	2.00	1			

* Teachers are Sisters.

[1] Approximate.

[2] Experience also required.

[3] Estimated.

[4] No data.

[5] Services given.

[6] Room, board, laundry, in addition to salary.

[7] Experience, musical ability, health, personal fitness.

[8] Statistics for year ended June, 1913.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
NEW YORK—continued.													
Plattsburgh	11,138	523	Parochial	St. Peter's Parochial	1	60	180	49	....	*1	$200	$200	Teachers' institute certificate.
Potsdam	4,036	173	Normal	Normal School Kindergarten	1	[1] 25	180	[1] 20	....	2	(2)	(2)	(2)
Rensselaer	10,711	460	Parochial	St. John's Academy	1	35	100	30	....	*1	100	....	Course in kindergarten work.
Rochester	218,149	9,380	Mission	Industrial School	1	[3] 45	300	30	....	1	720	480	City training school graduation.
Do	....	....	Private	Columbia Preparatory School	1	10	165	8	[4] $9.00	1	....	....	
Rome	20,497	881	do	Anna M. Lanphier	1	16	195	11	4.00	2	....	....	
Tonawanda	8,290	356	Parochial	St. Francis Church	1	11	184	8	....	*1	(4)	....	State requirement.
Utica	74,419	3,200	Settlement	Italian Settlement (Methodist Episcopal Church).	1	[1] 40	60	[1] 32	....	[1] 2	....	....	
Do	....	....	Private	Miss Anna Deeck's Kindergarten.	1	[3] 14	177	15	5.00	1	....	....	
Do	....	....	Orphanage	Utica Orphan Asylum	1	[3] 20	275	18	....	1	[3] 264	....	Ordinary education.
Watertown	26,730	1,149	Private	Miss Paris's Kindergarten	1	14	176	10	6.25	1	....	....	
White Plains	15,949	685	do	The Purdy School	1	15	280	14	6.00	1	....	....	
Yonkers	79,803	3,431	do	The Halsted School	1	6	176	4	4.75	1	....	....	
Do	....	....	Orphanage	Leake & Watts's Kindergarten	1	10	188	8	....	1	408	....	
NORTH CAROLINA.													
Asheville	18,762	806	Private	Asheville School for Girls	1	15	170	7	5.00	1	....	....	
Goldsboro	6,107	262	do	Goldsboro Kindergarten	1	20	154	16	4.00	1	....	....	
Greensboro	15,895	683	Mill	Proximity Manufacturing Co.	[5] 1	61	180	45	....	3	480	135	
Hickory	3,716	159	Private	Mrs. Abernethy's Kindergarten.	1	22	155	14	3.00	1	....	....	
Lumberton	2,230	95	Mill	Jennings Cotton Mill	[5] 1	[3] 35	160	30	....	1	320	....	.
Raleigh	19,218	826	Private	St. Mary's Kindergarten	1	30	155	15	3.00	1	....	....	
Wilmington	25,748	1,107	Mill	Delgodo Mills	1	[3] 50	(2)	[3] 40	....	2	....	....	
Do	....	....	Mission	Home Missionary Society	1	52	160	30	....	3	188	112	Teach while taking training.

Wilson	6,717	288	Private	Wilson Kindergarten	1	16	170	[3] 14	8.00	1	....	....	
NORTH DAKOTA.													
Fargo	14,331	616	Association	Fargo Free Kindergarten Association.	1	56	176	36	....	3	270	135	High-school graduation.
Do	....	....	Parochial	St. Mary's Parish	2	48	200	[4]45	....	*3	([4])	([4])	State certificate, normal training.
Litchville	484	20	Free	Litchville Kindergarten	1	23	60	18	....	1	....	....	
Valley City	4,606	197	Normal	State Normal	1	44	177	30	....	1	1,100	....	Experience, degree, and special training.
OHIO.													
Alliance	15,083	648	Private	"Froebel" Kindergarten	1	18	160	14	8.00	1	....	....	
Athens	5,463	234	Normal	State Normal College Kindergarten.	1	28	178	17	1.00	2	....	....	
Cincinnati	363,591	15,634	Parochial	Parochial School System	7	375	195	292	....	*[6] 7	300	250	([2])
Cleveland	560,663	24,108	Association	Cleveland Day Nursery and Free Kindergarten Association.	9	800	176	675	....	10	850	700	Graduation kindergarten training school.
Do	....	....	Private	Hathaway Brown Kindergarten.	1	28	160	16	7.50	2	....	....	
Do	....	....	do	Windermere Kindergarten	1	50	200	25	5.00	2	....	....	
Do	....	....	Orphanage	Cleveland Protestant Orphanage Asylum.	1	18	187	15	....	2	600	300	Graduation kindergarten training college.
Columbus	181,511	7,804	Private	Miss Helen Louise Lentz	1	28	170	15	4.00	2	....	....	
Do	....	....	Association	First Social Settlement Society	1	87	170	42	....	1	340	340	High-school graduation; kindergarten training school.
Do	....	....	Mission	St. John's Chapel, Trinity Parish.	1	38	168	30	....	1	270	270	Kindergarten training school graduation.
Do	....	....	do	St. Paul's Episcopal Church	1	40	[1] 180	20	....	1	[3] 315	[3] 225	Required kindergarten course.
Do	....	....	Private	Model Kindergarten	1	42	170	25	7.00	1	....	....	
Dayton	116,577	5,012	do	Miss Howe's and Miss Marot's.	1	15	176	13	6.66	1	....	....	
Defiance	7,327	314	do	Defiance Private Kindergarten	1	20	190	12	2.00	1	....	....	
Hamilton	35,279	1,516	Association	Federated Clubs	1	110	170	35	....	2	450	270	Three years' course in training school.
Lima	30,508	1,311	Private	East Lima Kindergarten	1	42	140	12	2.00	1	....	....	
Martins Ferry	9,133	392	do	Miss Ida Hoyle's Kindergarten.	1	30	120	18	2.00	1	....	....	
Maumee	2,307	98	Free	Lucas County Children's Home	1	22	200	18	....	1	420	420	Kindergarten normal.
Middletown	13,152	565	Private	Miss Kaser's Kindergarten	1	16	185	12	3.00	1	....	....	
New Bremen	1,586	67	Association	New Bremen Kindergarten	1	15	160	10	....	1	200	....	High-school graduation; normal school graduation.
Toledo	168,497	7,245	Private	Miss Southard's Kindergarten	1	35	180	30	[3] 5.50	2	....	....	
Do	....	....	do	Kindergarten department Jones-Franklin School.	1	22	180	17	6.66	2	....	....	
Do	....	....	Orphanage	St. Anthony's Orphanage, Catholic.	1	40	185	32	....	1	100	100	([2])

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* Teachers are Sisters.

[1] Estimated.

[2] No data.

[3] Approximate.

[4] Services given.

[5] Statistics for year ended June, 1913.

[6] Practice students in kindergarten training school.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
OHIO—continued.													
Youngstown	79,066	5,399	Association	Youngstown Free Kindergarten Association.	3	[1]148	184	[1]106		7	$850	$400	High-school graduation; special college training.
Do			Settlement	Christ's Mission Settlement	1	100	179	50		3	360	315	Kindergarten training school graduation.
OKLAHOMA.													
El Reno	7,872	338	Private	Sacred Heart Academy	1	75	165	60	$1.00	1			
Gotebo	740	32	Indian	Federal Government	1	35	182	17		1	450	450	Kindergarten training school graduation; civil-service examination.
Hammon	130	5	do	do	1	11	175	6		1	600	300	One year's course.
Tulsa	18,182	781	Private	Miss Brock and Miss Elliott's.	1	24	179	12	4.00	1			
Whiteeagle			Indian	Federal Government	1	36	180	35		1	864	600	Two years' training.
OREGON.													
Medford	8,840	380	Private	Seventh Day Adventist School	1	19	160	17	2.00	1			
Portland	207,214	8,993	do	Eliz. K. Matthew's Normal	1	30	175	20	[1]5.50	1			
Salem	14,094	606	do	Anna Nowlen's Kindergarten	1	20	(2)	15	3.00	1			
Warm Springs			Indian	Federal Government	1	[1]15	179	[1]13		1	500	500	Indian service standard.
PENNSYLVANIA.													
Allentown	51,913	2,232	Mission	Christ Lutheran Church	1	55	193	28		2	(2)	(2)	High-school graduation; 1 year's training.
Do			do	St. John's Lutheran Church	1	53	200	35		1	450	450	Teachers' certificate, Drexel Home.
Do			Private	St. Michael's Lutheran Kindergarten.	1	45	180	20	1.00	1			

Beaver Falls	12,191	524	Parochial	St. Mary's Roman Catholic Schools.	6	343	155	300		* 6	160	160	Diocesan examination.
Braddock	19,357	832	Private	Primrose Nursery	1	16	173	10	2.00	1			
Butler	20,728	891	do	Miss Philips's Kindergarten	1	[1]25	210	20	3.00	1			
Carlisle	10,303	443	Free	St. Katharine's Hall	1	30	200	20					
Chambersburg	11,800	507	Private	Miss Platt's Private Kindergarten.	1	25	(2)	15	2.00	1			
Clarion	2,612	112	Normal	State Normal Training School.	1	27	190	15	(3)	1			
Connellsville	12,845	552	Private	Playground and kindergarten.	1	70	[1]120	[1]40	2.00	3			
Crafton	4,583	196	do	Crafton Preparatory School	1	9	160	7	4.00	1			
East Stroudsburg	3,330	143	do	East Stroudsburg Model School	1	38	190	20		1			
Erie	66,525	2,688	Association	Erie Presbyterian Society of Home Missions.	1	80	240	25		1	600		Certificate of approved kindergarten training school.
Do			Parochial	Parochial school system	8	309	180	280		* 8	240	240	Normal training.
Do			Private	Mrs. Reed's	1	8	(2)	8	4.00	1			
Galeton	4,027	172	do	Home Kindergarten	1	27	90	10	3.00	1			
Greensburg	13,012	559	do	Miss Irwin's Kindergarten	1	16	234	12	4.00	1			
Harrisburg	64,186	2,759	do	Froebel Kindergarten	1	30	185	25	15.00	2			
Do			do	Misses Seiler's Preparatory School and Kindergarten.	1	15	160	12	6.25	2			
Do			do	West End Kindergarten	1	25	187	12	3.00	1			
Hazleton	25,452	1,094	Association	Hazleton Free Kindergarten Association.	1	63	156	45		3	450	180	High-school graduation; 2 years' training.
Huntingdon	6,861	294	Private	Huntingdon Private Kindergarten.	1	20	140	[1]18	3.00	1			
Kittanning	4,311	185	Free	Kittanning kindergartens	1	80	180	50		1			
Kutztown	2,360	101	Normal	Normal School Kindergarten.	1	36	190	24	2.00	1			
Lancaster	47,227	2,030	Association	Lancaster Kindergarten Association.	3	144	200	87		3	[4]550	400	Kindergarten course of 2 years.
Do			Private	Froebel Kindergarten	1	30	200	18	4.00	1			
Lansdowne	4,066	174	do	Private open-air kindergarten.	1	5	(2)	5	1.00	1			
Do			do	Lansdowne Friends School	1	6	177	3	6.00	1			
Lewisburg	3,081	132	do	Children's Private Kindergarten.	1	8	167	8	4.00				
Lock Haven	7,772	334	Normal	State Normal School Kindergarten.	1	35	200	25	[1]1.50	1			
Luzerne	5,426	233	Free	Martha Bennett Welfare	1	70	184	62		2			
McKeesport	42,694	1,835	Association	McKeesport Free Kindergarten Association.	4	200	180	140		6	675	360	Two years' kindergarten training.
McKees Rocks	14,702	632	Mission	Shadyside Mission Kindergarten.	1	80	145	50		2			
Nanticoke	18,877	811	do	St. Mary's Polish Church	1	105	200	[5]80		1	500		(2)
Overbrook	(2)		Private	Miss Sayward's School	1	20	160	17	10.00	3			
Phoenixville	10,742	461	do	Private kindergarten	1	5	160	[1]4	4.00	1			

* Teachers are Sisters.
[1] Approximate.
[2] No data.
[3] Small weekly fee.
[4] Supported partly by association and partly by board of education.
[5] Estimated.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
OHIO—continued.													
Youngstown	79,066	3 399	Association	Youngstown Free Kindergarten Association.	3	[1] 148	184	[1] 106	....	7	$850	$400	High-school graduation; special college training.
Do	....	....	Settlement	Christ's Mission Settlement	1	100	179	50	....	3	360	315	Kindergarten training school graduation.
OKLAHOMA.													
El Reno	7,872	338	Private	Sacred Heart Academy	1	75	165	60	$1.00	1	....	....	
Gotebo	740	32	Indian	Federal Government	1	35	182	17	....	1	450	450	Kindergarten training school graduation; civil-service examination.
Hammon	130	5	....do	....do	1	11	175	6	....	1	600	300	One year's course.
Tulsa	18,182	781	Private	Miss Brock and Miss Elliott's	1	24	179	12	4.00	1	....	....	
Whiteeagle	....	....	Indian	Federal Government	1	36	180	35	....	1	864	600	Two years' training.
OREGON.													
Medford	8,840	380	Private	Seventh Day Adventist School	1	19	160	17	2.00	1	....	....	
Portland	207,214	8,993	....do	Eliz. K. Matthew's Normal	1	30	175	20	[1] 5.50	1	....	....	
Salem	14,094	606	....do	Anna Nowlen's Kindergarten	1	20	(2)	15	3.00	1	....	....	
Warm Springs	....	....	Indian	Federal Government	1	[1] 15	179	[1] 13	....	1	500	500	Indian service standard.
PENNSYLVANIA.													
Allentown	51,913	2,232	Mission	Christ Lutheran Church	1	55	193	28	....	2	(2)	(2)	High-school graduation; 1 year's training.
Do	....	....	....do	St. John's Lutheran Church	1	53	200	35	....	1	450	450	Teachers' certificate, Drexel Home.
Do	....	....	Private	St. Michael's Lutheran Kindergarten.	1	45	180	20	1.00	1	....	....	

Beaver Falls	12,191	524	Parochial	St. Mary's Roman Catholic Schools.	6	343	155	300		*6	160	160	Diocesan examination.
Braddock	19,357	832	Private	Primrose Nursery	1	16	173	10	2.00	1			
Butler	20,728	891	do	Miss Philips's Kindergarten	1	[1] 25	210	20	3.00	1			
Carlisle	10,303	443	Free	St. Katharine's Hall	1	30	200	20					
Chambersburg	11,800	507	Private	Miss Platt's Private Kindergarten.	1	25	(2)	15	2.00	1			
Clarion	2,612	112	Normal	State Normal Training School.	1	27	190	15	(3)	1			
Connellsville	12,845	552	Private	Playground and kindergarten.	1	70	[1] 120	[1] 40	2.00	3			
Crafton	4,583	196	do	Crafton Preparatory School	1	9	160	7	4.00	1			
East Stroudsburg	3,330	143	do	East Stroudsburg Model School	1	38	190	20		1			
Erie	66,525	2,688	Association	Erie Presbyterian Society of Home Missions.	1	80	240	25		1	600		Certificate of approved kindergarten training school.
Do			Parochial	Parochial school system	8	309	180	280		*8	240	240	Normal training.
Do			Private	Mrs. Reed's	1	8	(2)	8	4.00	1			
Galeton	4,027	172	do	Home Kindergarten	1	27	90	10	3.00	1			
Greensburg	13,012	559	do	Miss Irwin's Kindergarten	1	16	234	12	4.00	1			
Harrisburg	64,186	2,759	do	Froebel Kindergarten	1	30	185	25	15.00	2			
Do			do	Misses Seiler's Preparatory School and Kindergarten.	1	15	160	12	6.25	2			
Do			do	West End Kindergarten	1	25	187	12	3.00	1			
Hazleton	25,452	1,094	Association	Hazleton Free Kindergarten Association.	1	63	156	45		3	450	180	High-school graduation; 2 years' training.
Huntingdon	6,861	294	Private	Huntingdon Private Kindergarten.	1	20	140	[1] 18	3.00	1			
Kittanning	4,311	185	Free	Kittanning kindergartens	1	80	180	50		1			
Kutztown	2,360	101	Normal	Normal School Kindergarten.	1	36	190	24	2.00	1			
Lancaster	47,227	2,030	Association	Lancaster Kindergarten Association.	3	144	200	87		3	[4] 550	400	Kindergarten course of 2 years.
Do			Private	Froebel Kindergarten	1	30	200	18	4.00	1			
Lansdowne	4,066	174	do	Private open-air kindergarten.	1	5	(2)	5	1.00	1			
Do			do	Lansdowne Friends School	1	6	177	3	6.00	1			
Lewisburg	3,081	132	do	Children's Private Kindergarten.	1	8	167	8	4.00				
Lock Haven	7,772	334	Normal	State Normal School Kindergarten.	1	35	200	25	[1] 1.50	1			
Luzerne	5,426	233	Free	Martha Bennett Welfare	1	70	184	62		2			
McKeesport	42,694	1,835	Association	McKeesport Free Kindergarten Association.	4	200	180	140		6	675	360	Two years' kindergarten training.
McKees Rocks	14,702	632	Mission	Shadyside Mission Kindergarten.	1	80	145	50		2			
Nanticoke	18,877	811	do	St. Mary's Polish Church	1	105	200	[5] 80		1	500		(2)
Overbrook	(2)		Private	Miss Sayward's School	1	20	160	17	10.00	3			
Phoenixville	10,742	461	do	Private kindergarten	1	5	160	[1] 4	4.00	1			

* Teachers are Sisters.
[1] Approximate.
[2] No data.
[3] Small weekly fee.
[4] Supported partly by association and partly by board of education.
[5] Estimated.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
PENNSYLVANIA—contd.													
Pittston	16,267	699	Private	Miss Hartman's Kindergarten.	[1] 1	16	180	10	2.00	1			
Reading	96,071	4,131	do	Miss Frederick's Kindergarten.	1	50	201	30	2.00	1			
Do			do	Miss Smith and Miss Miltimore's Kindergarten.	1	37	175	25	3.00	1			
Do			do	Miss Mersinger's Kindergarten.	1	12	177	8	2.00	1			
Do			Association	Reading Free Kindergarten Association.	4	120	176	94		4	$450	$360	High-school and special training.
Ridley Park	1,761	75	Private	Ridley Park Kindergarten	1	12	217	8	5.00	1			
Scranton	129,867	5,584	Mission	City Evangelical Union Methodist Episcopal Church.	1	40	200	25		1	400	400	Graduation from approved training school.
Do			Private	Frances M. Lindsay's Kindergarten.	1	16	[2] 200	14	[2] 6.50	1			
South Bethlehem	19,973	858	Parochial	St. John Capistrano	1	75	200	52		1	300	300	([3])
Throop	5,133	220	Free	Logan Memorial Kindergarten	1	73	180	43		2	500		([3])
Tyrone	7,176	308	Private	Miss Miller's Kindergarten	1	13	([3])	[4] 9	2.50	1			
Washington	18,778	807	do	Fifth Ward Kindergarten	1	29	183	15	3.00	1			
Do			do	Miss Caldwell's Private School.	1	30	200	18	3.00	2			
West Chester	11,767	505	Association	The S. B. McConkey Kindergarten Association.	1	45	193	18		1	350	350	Graduation from approved kindergarten training school.
Wilkes-Barre	67,105	2,885	do	Wyoming Valley Kindergarten Federation.	5	325	230	40		5	500	400	Kindergarten training.
Do			Mission	First and Central Methodist Episcopal Church.	1	50	200	38		1	500		([3])
Do			Settlement	Settlement Association	1	40	200	30		1	600		High-school graduation; kindergarten training-school graduation.
Williamsport	31,860	1,360	Private	Froebel Kindergarten and Primary School.	1	25	180	18	3.50	2			
Do			do	Vallamont Kindergarten	1	30	180	15	3.00	2			

Do			Free	Mrs. Theo. Beck's Kindergarten.	1	78	160	51		1			
Wyomissing	985	42	Association	Women's Civic League	1	23	[2] 180	16		1	160		
RHODE ISLAND.													
Albion	([3])		Parochial	St. Ambrose Church	1	53	295	51		1	240		([3])
North Providence	5,407	232	Private	Fruit Hill Kindergarten	[1] 1	13	136	10	2.00	1			
Lonsdale			do	Christ Church Kindergarten	1	35	184	28	.50	2			
Pawtucket	51,622	2,219	Parochial	St. John Baptist's	1	55	202	41		1	([3])	([3])	([3])
Peace Dale			Free	Stepping Stone Kindergarten	1	58	200	38		2			
Philipsdale			Private	Philipsdale Kindergarten	[1] 1	38	140	20	1.00	2			
Providence	224,326	9,646	do	Misses Bronson's Kindergarten.	1	11	165	7	7.50	1			
Do			Normal	Normal School Kindergarten	1	52	186	35	8.00	2			
Do			Private	Miss Brown's Kindergarten	1	10	180	8	[2] 4.00	3			
Woonsocket	38,125	1,639	Parochial	Precious Blood Parish	1	95	197	86		*3	600		
SOUTH CAROLINA.													
Anderson	9,654	414	Mill	Brogan Mills	[1] 1	65	190	42		2	630		
Belton	1,652	70	do	Belton Mills	1	30	175	25		1	360		Testimonial from kindergarten training school.
Charleston	58,833	2,529	Association	Kelly Kindergarten Association.	1	45	150	39		2	225		Graduation from approved kindergarten training school.
Do			Free	Charleston Free Kindergarten (colored).	1	[2] 40	160	[2] 30		2			
Do			Association	South Carolina Kindergarten Association.	3	150	160	114		6			Do.
Do			Private	St. Philip Street	1	25	160	25	2.00	1			
Do			do	Home Kindergarten	1	10	164	8	3.00	1			
Do			do	Ashley Avenue Kindergarten	1	23	161	15	2.00	1			
Columbia	26,319	1,131	Mill	Parker Cotton Mills Co	[1] 3	66	180	45		3	450	180	
Do			do	Columbia Mills Co	[1] 1	104	180	100		2	700		
Do			Private	Miss Shand's Kindergarten	1	45	175	25	3.00	1			
Greer	1,673	71	Mill	Victor Manufacturing Co	1	50	150	40		1	300		
Greenville	15,741	676	do	Monoghan Mills	[1] 2	88	180	33		2	540	180	
Laurens	4,818	206	do	Laurens Cotton Mill	[1] 1	70	200	40		1	550		
Lando	([1])		do	Manetta Mills	1	38	180	26		1	[2] 450		
Pelzer	1,500	64	do	Pelzer Manufacturing Co	[1] 1	110	175	21		2	495		
Rock Hill	7,216	310	Normal	Winthrop College Kindergarten.	1	[2] 65	[2] 180	40	1.00	1			
Do			Mill	Little Neighbor Kindergarten	1	30	180	25		1	385		
Do			do	Hamilton Carhartt Manufacturing Co.	[1] 1	40	180	40		1	720		
Union	5,623	241	do	Monarch Cotton Mills	[1] 1	67	180	28		1	360		

* Teachers are Sisters.

[1] Statistics for year ended June, 1913.

[2] Approximate.

[3] No data.

[4] Estimated.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
SOUTH DAKOTA.													
Lead	8,392	360	Free	Hearst Free Kindergarten	1	284	177	115	....	5	$675	$450	Graduation from approved kindergarten school and experience.
Madison	3,137	134	Normal	State Normal	1	45	177	20	....	1	900	....	Two years' kindergarten training.
Yankton	3,787	162	Private	Yankton Kindergarten	1	50	210	40	2.00	2	....	....	
TENNESSEE.													
Bemis	....	....	Mill	Jackson Fiber Co	[1] 1	48	198	29	....	1	300	....	
Chattanooga	44,604	1,917	Private	Miss Dyer's Kindergarten	1	18	100	15	2.00	1	....	....	
Do	....	....	do	Highland Park Kindergarten	1	34	150	25	3.00	1	....	....	
Knoxville	36,346	1,562	do	Park City Kindergarten	1	30	145	15	2.00	1	....	....	
Do	....	....	Association	Brookside Kindergarten Association.	1	94	181	51	....	3	[2] 270	....	Graduation from training school; 1 year's experience.
Do	....	....	Parochial	St. Mary's Parish	2	82	186	[3] 75	....	[4] 2	200	200	Highest.
Do	....	....	Private	Miss Cunningham's Kindergarten.	1	16	180	14	2.00	1	....	....	
Memphis	131,105	5,678	Association	Federation of Jewish Charities.	1	80	132	66	....	2	350	105	Kindergarten training certificate.[4]
Do	....	....	do	First Methodist Church and Educational Alliance.	2	125	165	81	....	3	120	([5])	
Nashville	110,364	4,745	Private	Kindergarten Department of Ward Seminary.	[1] 1	29	168	17	6.50	2	....	....	
Do	....	....	Settlement	Wanioto Settlement Kindergarten.	2	30	175	25	....	1	[3] 225	....	Two years' training.
Do	....	....	Association	Nashville Section Council Jewish Women.	1	54	166	37	....	1	280	280	Graduation from approved kindergarten training school.
Do	....	....	Mission	Methodist Training School	1	27	145	20	....	1	720	....	([6])
Park City	5,126	220	Private	Park City Private Kindergarten.	1	26	180	19	([6])	1	....	....	

TEXAS.													
Abilene	9,204	395	Association	Abilene Kindergarten Association.	1	27	170	17	2.50	1			
Austin	29,860	1,283	Private	Drew-Blair Kindergarten Training School.	1	25	180	18	(6)	2			
Callinger	3,536	151	do	Ballinger Private Kindergarten.	1	22	175	16	2.50	2			
Banadian	1,648	70	do	Canadian Baptist Academy	1	36	176	23	3.00	1			
Dallas	92,104	3,960	Association	Dallas Free Kindergarten Association.	2	175	190	145		2	585	150	College graduation or equivalent.
Do			Private	Mrs. H. B. Taylor's Kindergarten.	1	[3] 25	(6)	[3] 20		1	(6)	(6)	
Do			do	Miss Mary Innes's Kindergarten.	1	[3] 30	(6)	[3] 28		1	(6)		
Do			do	Miss Ethel Cornett's Kindergarten.	1	[3] 20	(6)	[3] 15		1	(6)		
Fort Worth	73,312	3,152	do	Polytechnic Kindergarten	1	[7] 15	180	[7] 11	2.00	1			
Do			do	Miss Frances Moore's Kindergarten.	1	[7] 20	180	[7] 15	2.00	1			
Do			do	Tenth Ward Kindergarten	[8] 1	[7] 25	180	[7] 15	2.00	1			
Gainesville	7,624	327	do	Mrs. Hancock's Kindergarten.	1	30	100	20	3.00	2			
Galveston	36,981	1,590	do	Miss Branigar's Kindergarten.	1	[3] 20	(6)	[3] 17	(6)	1			
Do			Association	Johanna Runge Free Kindergarten Association.	1	75	[3] 180	60		5	[3] 540	[3] 135	Graduation from Kindergarten training school.
Houston	78,800	3,388	do	Houston Kindergarten Association.	3	175	175	135		3	630	450	Graduation from approved kindergarten training school.
Do			Private	Miss Swinford's Kindergarten	[1] 1	15	175	12	5.00	2			
Do			do	Mrs. W. J. Kinkaid's Kindergarten.	[1] 1	38	166	24	5.00	2			
Do			do	Miss Hall's Kindergarten	1	40	175	20	2.00	1			
Do			do	Misses Cushman's Kindergarten.	1	30	160	22	5.00	3			
Paris	11,269	484	do	Miss Bedford's Kindergarten	1	18	148	15	3.00	1			
Pearsall	1,799	76	do	Pearsall Kindergarten	[1] 1	25	138	17	1.50	1			
Port Arthur	7,663	329	do	Port Arthur Kindergarten	[1] 2	30	180	22	2.50	2			
San Antonio	96,614	4,154	do	Miss Talbot's Kindergarten	1	14	149	12	4.00	1			
Do			Association	San Antonio Kindergarten Association.	4	200	160	130		3	450	270	Kindergarten training.
Temple	10,993	472	Private	Temple Kindergarten	1	15	150	8	3.50	1			
UTAH.													
Provo	8,925	383	Private	Kindergarten department, Brigham Young University.	1	82	168	51	1.00	1			

* Teachers are sisters.
[1] Statistics for year ended June, 1913.
[2] Room, board, laundry, in addition to salary.
[3] Approximate.
[4] Experience also required.
[5] Services given.
[6] No data.
[7] Estimated.
[8] Taken over by public school, 1912-13.

TABLE 6.—*Statistics of kindergartens other than public for year ended June 30, 1912*—Continued.

Cities and towns.	Total population, census 1910.	Estimated population of kindergarten age.	Type of kindergarten.	Kindergarten or supporting body.	Number of kindergartens.	Number of children enrolled.	School year, in days.	Average daily attendance.	Tuition per month.	Kindergarten teachers.			Preparation required of kindergarten teachers.
										Number.	Maximum salary.	Minimum salary.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
UTAH—continued.													
Salt Lake City	92,777	3,989	Private	Kindergarten department, University of Utah.	1	77	178	45	$1.00	3			
Do			Association	Salt Lake Free Kindergarten and Neighborhood House.	1	55	172	34		1	$540		High-school graduation; kindergarten training school graduation.
VERMONT.													
Brattleboro	6,517	279	Association	Thompson Trust and Brattleboro Women's Club.	1	48	196	21		2	500	$200	High-school graduation; special kindergarten training.
Do			Free	Brattleboro Free Kindergarten	1	51	196	20		2	350		
Montpelier	7,856	337	Private	Miss Briggs's Kindergarten	1	9	145	6	4.00	1			
VIRGINIA.													
Alexandria	15,329	659	Association	Alexandria Free Kindergarten.	1	64	153	[1] 48		2	280	200	Kindergarten training.
Danville	19,020	817	Mill	Dan River Cotton Mills	1	117	157	37		4	[2] 1,062	[2] 594	Graduation from approved kindergarten training school.
Lynchburg	29,494	1,268	do	Lynchburg Cotton Mills	1	43	159	24		2	400	320	Two years' kindergarten training.
Newport News	20,205	868	Free	Huntington Kindergarten	1	101	161	84		4			
Norfolk	67,452	2,900	Association	Norfolk Kindergarten Association.	5	215	200	165		11	500	300	Graduation from Norfolk high school.
WASHINGTON.													
Everett	24,814	1,067	Private	Everett Private Kindergarten.	1	36	192	20	2.00	1			
North Yakima	14,082	605	do	Alice Blatchford Scudder	1	38	187	16	2.50	2			
Seattle	237,194	1,027	do	The Seattle Kindergarten	1	18	200	11	4.50	1			
Do			Association	Methodist Deaconness Association.	1	35	195	20		1	(3)		Graduation from kindergarten training school.
Do			Private	Queen Anne Hill Kindergarten	1	73	198	15	3.00	1			

Spokane	104,402	4,489	Association	Ladies' Benevolent Society	1	32	160	14		1	400		Graduation from approved kindergarten training school.
Do			do	Woman's Club Day Nursery	1	30	200	30		1	250		Graduation from Armour Institute.
Do			Private	The Manito Kindergarten	1	33	180	17	4.00	1			
Tulalip			Indian	Federal Government	1	25	250	25		1	660	600	Civil-service examination.
WEST VIRGINIA.													
Bluefield	11,118	478	Private	Bluefield Kindergarten	1	16	178	13	5.00	1			
Morgantown	9,150	393	do	Mrs. Hurxthal's Kindergarten	1	20	[1] 175	17	4.00	1			
Wheeling	41,641	1,790	Mission	King's Daughters	1	65	[1] 180	38		2			Kindergarten training.
WISCONSIN.													
La Crosse	30,417	1,307	Normal	State Normal School	1	25	200	16	10.00	1			
Merrill	8,689	373	Mission	Seventh Day Adventist Church School	1	6	180	4		1			
Milwaukee	373,875	16,076	Normal	State Normal	1	59	200	40		1	1,100	(4)	Two years' training experience and study.
Do			Association	Milwaukee Mission Kindergarten and Neighborhood Association.	3	245	195	90		3	1,000	640	None.
Marinette	14,610	628	Parochial	Our Lady of Lourdes	1	54	200	40		*2	209		Special training.
Oshkosh	33,062	1,421	Normal	State Normal	1	34	200	19	.70	1			
Platteville	4,452	191	do	State Normal	1	33	305	28		1			
Racine	38,002	1,634	Private	Mrs. Anderson's School	[5] 1	10	170	9	8.75	1			
Superior	40,384	1,736	Normal	State Normal School	1	64	200	51		1			
Waukesha	8,740	375	Association	Metropolitan Church Association	1	15	188	[1] 14		1	(6)		Educational requirements.
Whitewater	3,224	138	Normal	State Normal School	1	45	200	22		1			

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* Teachers are sisters.
[1] Approximate.
[2] Room, board, laundry, in addition to salary.
[3] No data.
[4] Practice-students in kindergarten training school.
[5] Statistics for year ended June, 1913.
[6] Services given.

List of kindergartens for which no statistical data are available.[1]

States and cities.	Name of kindergarten.
Alabama:	
Birmingham	Ensley Wesley House.
Bessemer	Miss Adam's Kindergarten.
Do	Miss Brun's Kindergarten.
Sheffield	Free Kindergarten.
Arkansas:	
Okolona	Miss Alice Stewart's Kindergarten.
Texarkana	Central High Kindergarten.
California:	
Los Angeles	Angelus Vista School.
Do	Chinese Kindergarten.
Do	Misses Jane's Kindergarten.
Oakland	Dennison Street Settlement Kindergarten.
Do	Good Will Free Kindergarten.
Do	Key Route Inn Kindergarten.
Do	Orphans' Home Kindergarten.
Do	Plymouth Church Kindergarten.
Do	Miss Ruth Seeley's Kindergarten.
San Francisco	Emanuel Kindergarten Society (2 kindergartens).
Do	Occidental Free Kindergarten.
Do	Pixley Memorial Free Kindergarten.
Santa Rosa	California Fruit Canner's Association Kindergarten.
Colorado:	
Denver	Belle Lennox Nursery.
Do	Froebel Montessori School.
Do	Miss Anna Woolcut's Kindergarten.
Pueblo	Sacred Heart Orphanage.
Do	Woodcroft School.
Connecticut:	
Hartford	North Street Kindergarten.
Lakeville	Connecticut School for Imbeciles.
New Haven	New Haven Orphan Asylum.
Springfield	Mrs. Francis M. Page's Kindergarten.
Waterbury	St. Mary's Parochial Kindergarten.
Windsor	Miss Carter's Kindergarten.
Delaware:	
Wilmington	Home for Friendless and Destitute Children.
Dist. Columbia:	
Washington	Neighborhood House.
Do	Lucy Webb Hayes Kindergarten.
Do	Washington Home for Foundlings.
Florida:	
Jacksonville	Miss Adele Jocabi's Kindergarten.
St. Augustine	St. Augustine Free Kindergarten.
Georgia:	
Atlanta	Gate City Free Kindergarten.
Do	Normal School Kindergarten.
Do	West End Kindergarten.
Macon	Appleton Church Home Kindergarten.
Savannah	Miss Agnes Lyon's Kindergarten.
Illinois:	
Belleville	Miss Lily Flanagan's Kindergarten.
Do	St. John's Orphanage.
Chicago	Angel Guardian Orphan Asylum.
Do	Avondale Kindergarten.
Do	Francis E. Clark Settlement.
Do	Forty-first Street Pres. Ch. Kindergarten.
Do	Gad's Hill Settlement.
Do	Grace Church.
Illinois—Contd.	
Chicago	Lillian White Grant's Kindergarten.
Do	Hull House.
Do	Miss Mary Otterson's Kindergarten.
Do	Park No. 1 and No. 2 Kindergartens.
Do	Plymouth Kindergarten.
Do	Mrs. Frederica Root's Kindergarten.
Do	St. Paul's Kindergarten.
Do	Stevan's School for Girls.
Do	Unitarian Church Kindergarten.
Do	Wilson Avenue Y. W. C. A.
Do	Woodlawn Avenue.
Decatur	Daggett Kindergarten.
Edwardsville	Leclair Kindergarten.
Elgin	First Methodist Church Kindergarten.
Freeport	Miss Edith Christler's Kindergarten.
Galesburg	Miss Rheda Coates's Kindergarten.
Godfrey	"Beverly Farm" Home and School for Nervous and Backward Children.
Harvey	Miss Mabel Lewis's Kindergarten.
Hoyleton	Evangelical Orphanage.
Joliet	Miss Dorothy Henderson's Kindergarten.
Lake Bluff	Methodist Deaconess Orphanage and Epworth Church Home.
La Salle	Miss Myrtle McGinnis's Kindergarten.
Lincoln	State School and Colony.
Paxton	Miss Merrie Mill's Kindergarten.
Quincy	Cheerful Home.
Springfield	Lavina Beach Mission Kindergarten.
Urbana	Cunningham Children's Home.
Indiana:	
Brazil	Private Kindergarten.
Indianapolis	Ketcham Kindergarten.
South Bend	Laurel Kindergarten.
Do	St. Joseph County Association Kindergarten.
Terre Haute	The Rose Orphan Asylum.
Iowa:	
Beloit	United Norwegian Lutheran Church Orphans' Home.
Davenport	Soldiers' Orphans' Home.
Sioux City	Miss Jane Green's Kindergarten.
Kansas:	
Enterprise	Miss Gladys Johnson's Kindergarten.
Kansas City	Fellowship House Kindergarten.
Leavenworth	Free Kindergarten Association.
Wichita	Wichita Children's Home.
Winfield	State Home for Feeble Minded.
Kentucky:	
Louisville	Miss Elizabeth Brown's Kindergarten.
Do	Children's Home Society.
Louisiana:	
New Orleans	Jewish Orphans' Home.
Maine:	
Gardiner	House of the Good Shepherd.
Portland	Miss Marion P. Dana's Kindergarten.
West Pownal	Maine School for Feeble-Minded.

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[1] See also list on p. 89.

List of kindergartens for which no statistical data are available.—Continued.

States and cities.	Name of kindergarten.
Maryland:	
Baltimore	Egenton Home.
Do	Hampden Free Kindergarten.
Do	Home of the Friendless.
Do	Light Street Free Kindergarten, Nursery, and Child's Hospital.
Cambridge	Mrs. Handby's Kindergarten.
Salisbury	Miss Elizabeth Humphrey's Kindergarten.
Massachusetts:	
Boston	Mrs. Copely-Greene's Kindergarten.
Do	Emanuel House.
Do	Guild of St. Elizabeth.
Do	Home for Destitute Catholic Children.
Do	New England Home for Little Wanderers.
Do	Roxbury Neigborhood House.
Do	South End House.
Fall River	St. Joseph's Orphanage.
Falmouth	Martha Hall Kindergarten.
Hudson	Miss Laura Brigham's Kindergarten.
Ipswich	Mrs. Robert Brown's Kindergarten.
Do	Mrs. Geo. Taylor's Kindergarten.
Leominster	Miss Fannie L. Flint's Kindergarten.
Lexington	Congregational Kindergarten.
Lynn	Lynholm By the Sea.
Melrose	Miss Francis Lowdon's Kindergarten.
Milford	Froebel Kindergarten.
Natick	Mrs. Geo. B. Haven's Kindergarten.
N. Attleboro	Miss Ryder's Kindergarten.
Pawtucket	Miss Marietta King's Kindergarten.
Wakefield	Miss Grace White's Kindergarten.
Waverly	Massachusetts School for Feeble-Minded.
Worcester	Orphanage of Our Lady of Mercy.
Wrentham	Wrentham State Normal.
Michigan:	
Coldwater	Michigan State Public Schools.
Detroit	Miss Florence M. Clark's Kindergarten.
Do	Detroit Industrial School and Free Kindergarten.
Do	Detroit University School.
Do	East Side Settlement Association Kindergarten.
Do	Italian-American Institute.
Do	Jefferson Avenue Kindergarten.
Grand Rapids	D. A. Blodgett Home for Children.
Do	Grace Church Parish Free Kindergarten.
Do	Sacred Heart Academy.
Minnesota:	
Faribault	Minnesota School for Feeble-Minded and Epileptic.
Minneapolis	Washburn Memorial Orphan Asylum.
Mississippi:	
Jackson	Mississippi Baptist Orphanage.
Missouri:	
Alton	Cherry Street Baptist Kindergarten.
Cape Girardeau	State Normal School Kindergarten.
Kansas City	Miss Barston's Kindergarten.
Do	Miss Richard's Kindergarten.
Do	Sisters of Zion.
Missouri—Contd.	
Kansas City	Miss Francis Scott's Kindergarten.
St. Louis	German Protestant Orphans' Home.
Do	Girls' Industrial Home.
Do	Mission Free School, Church of the Messiah.
Warrenton	Central Wesleyan Orphan Asylum.
Montana:	
Boulder	Montana Training School for Backward Children.
Nebraska:	
Beatrice	Institution for Feeble-Minded Youth.
Lincoln	Congregational Church Kindergarten.
York	Mothers' Jewels Home.
New Hampshire:	
Dover	Miss Ruth Dearborn's Kindergarten.
Laconia	New Hampshire School for Feeble-Minded.
Manchester	Mrs. Moore's Kindergarten.
New Jersey:	
Elizabeth	Egenolf Day Nursery.
Englewood	Daisy Field's Home and Hospital.
Hackensack	Mrs. Richards's Kindergarten.
Jersey City	Miss Ida L. Lewis's Kindergarten.
Montclair	Miss Doubleday's Kindergarten.
Newark	Newark Orphans' Home.
Parsippany	Morris County Children's Home.
Paterson	Miss Jennie Hover's Kindergarten.
Do	Miss Margaret Hoxsey's Kindergarten.
Skillman	New Jersey State Village for Epileptics.
Trenton	Miss Bessie Van Syckle.
New York:	
Albany	Orphan Asylum.
Albion	Mrs. Robert Moore's Kindergarten.
Auburn	Miss Marion Tripp's Kindergarten.
Bath	Davenport Home.
Blauvelt	Asylum of Sisters of St. Dominic.
Brooklyn	Angel Guardian House.
Do	Brooklyn Industrial Home.
Do	First Hebrew Day Nursery and Kindergarten Association.
Do	Katharine Tilney Kindergarten.
Do	Messiah Lutheran Kindergarten.
Do	Methodist Episcopal Church Kindergarten.
Do	Nostrand Avenue Methodist Episcopal.
Do	Orphan Asylum Society.
Do	Park Avenue Branch Congregational.
Do	Miss M. T. Purdy's Kindergarten.
Do	St. John's Home.
Do	St. Mark's Protestant Episcopal.
Do	Strong Place Baptist Church.
Buffalo	Buffalo Orphan Asylum.
Do	Fitch Crèche.
Hudson	Orphan and Relief Association Kindergarten.
Iroquois	Thomas Indian School.

List of kindergartens for which no statistical data are available.—**Continued.**

States and cities.	Name of kindergarten.
New York—Contd.	
Long Island (Garden City)	House of St. Giles.
Long Island (Kings Park.)	Howard Orphanage Industrial Home.
Matteawan	Miss Amy DuBois's Kindergarten.
Nanuet	St. Agatha Home.
New York	Ascension Memorial Protestant Episcopal Church.
Do	Barnard School.
Do	Bethany Congregational Church.
Do	Bloomingdale Guild.
Do	B'nai Jeshurum Congregation.
Do	Bohemian Kindergarten.
Do	Calvary Baptist Church.
Do	Catharine Mission.
Do	Central Presbyterian Church.
Do	Miss Chapin's Kindergarten.
Do	Church of the People.
Do	Colored Orphan Asylum.
Do	E. and M. Davidsburg Kindergarten.
Do	Educational Alliance Association.
Do	Friendship Neighborhood House.
Do	Grace Church Day Nursery.
Do	Halsey Day Nursery.
Do	Hamilton House.
Do	Hawthorne School.
Do	Hebrew Infant Asylum.
Do	Hope Day Nursery.
Do	Jenny Hunter Training School.
Do	Intercession Chapel Protestant Episcopal.
Do	Italian Methodist Episcopal Church.
Do	Miss Jacobi's School.
Do	Misses Johnston's School.
Do	Little Mother's Day Nurseries (3 kindergartens).
Do	Madison Avenue Reformed.
Do	St. Agnes Day Nursery.
Do	St. Augustine Protestant Episcopal.
Do	St. Chrysostom's Protestant Episcopal.
Do	St. Joseph's Orphan Asylum.
Do	School of Mothercraft.
Do	Miss Mary Schoonmaker's Kindergarten.
Do	Scotch Presbyterian Kindergarten.
Do	Scudder School for Girls.
Do	Virginia Day Nursery.
Do	Warren Goddard House.
Do	Washington Heights Day Nursery.
Do	West Side Day Nursery.
Oswego	Oswego Orphan Asylum.
Peekskill	Mount Florence School.
Randall's Island.	New York City Children's Hospital and School.
Rochester	Rochester Orphan Asylum.
Do	St. Joseph's Asylum.
Saratoga Springs.	Miss Copeland's School.
Schenectady	Miss Anna A. Merriam's School.
Syracuse	Onondaga Orphans' Home.
Do	St. Vincent's Asylum.
Troy	Troy Orphans' Home.
Utica	House of the Good Shepherd Kindergarten.
Do	St. Joseph's Infants' Home.
White Plains	Noble School.

States and cities.	Name of kindergarten.
North Carolina:	
Asheville	Miss Lizzie Steven's Kindergarten.
Ohio:	
Cleveland	Christ Church Kindergarten.
Columbus	Hungarian Kindergarten.
Do	Mrs. L. H. Innis's Kindergarten.
Do	Institution for Feeble-Minded.
Lancaster	Miss Arabel Wright's Kindergarten.
Marietta	Miss Rhea Hill's Kindergarten.
Troy	Miss Margaret Geiger's Kindergarten.
Oklahoma:	
Chickasha	Miss Lottie Harris's Kindergarten.
Pennsylvania:	
Ambridge	Ambridge Kindergarten.
Archbald	Daisy Memorial Kindergarten.
Beaver	Free Kindergarten.
Berwick	Y. M. C. A. Kindergarten.
Braddock	The Hazel House Kindergarten.
Harrisburg	Miss Mary Cresswell's Kindergarten.
Do	Pine Street Presbyterian Church Kindergarten,
Lansdowne	Brookwood School for Nervous and Backward Children.
Lebanon	Miss Joyce Light's Kindergarten.
Polk	Western Pennsylvania State Institution for Feeble-Minded.
Reading	Miss Moyer's Kindergarten.
Renovo	Miss Margaret Green's Kindergarten.
Scranton	Miss Gertrude Coursen's Model Kindergarten.
Spring City	Eastern Pennsylvania State Institution for Feeble-Minded.
Steelton	Miss Edith D. Young's Kindergarten.
Warren	Miss Blanch E. Jackson's Kindergarten.
South Carolina:	
Abbeville	Miss Julia P. Wiley's Kindergarten.
Columbia	Columbia Free Kindergarten.
Greenville	Female College.
Tenessee:	
Bristol	Mrs. Sam Carter Waddell's Kindergarten.
Murfreesboro	Bristol-Nelson School.
Nashville	Mrs. W. H. Binns's Kindergarten.
Do	Miss Lucille Manning's Kindergarten.
Texas:	
Bolton	Miss Van Doren's Kindergarten.
Bonham	Bonham Free Kindergarten.
Dallas	Presbyterian Mission Kindergarten.
Fort Worth	Miss Grace Myles's Kindergarten.
Galveston	Walter Colquitt Memorial Hospital.
Paris	Miss Madge Seckel's Kindergarten.
San Antonio	Miss Edith Gholson's Kindergarten.
Sulphur Springs.	Miss Ella Ashcroft's Kindergarten.
Vermont:	
Rutland	Church Street Kindergarten.

List of kindergartens for which no statistical data are available.—Continued.

States and cities.	Name of kindergarten.
Washington:	
Aberdeen	W. J. Patterson Kindergarten.
Chehalis	Miss Cooke's Kindergarten.
Medical Lake	State Institution for Feeble-Minded.
Seattle	Miss Daniel's Kindergarten.
Do	Day Nursery Kindergarten.
Do	Miss Emma Moctin's Kindergarten.
Do	University Kindergarten.
Spokane	Miss L. C. Barrett's Kindergarten.
Do	Miss Zula Bethel's Kindergarten.
Do	Mrs. Maud Heleniak's Kindergarten.
Do	Holy Name Academy.
Washington—Con.	
Spokane	Spokane Children's Home.
Tacoma	Mrs. Harry S. Couch's Kindergarten.
Do	Steele Street Kindergarten.
West Virginia:	
Wheeling	South Side Kindergarten.
Wisconsin:	
Chippewa Falls	Wisconsin Home for Feeble-Minded.
Green Bay	Miss L. Wiese's Kindergarten.
Jefferson	St. Coletta's Institution for Feeble-Minded.
Lake Geneva	Oak Leigh Educational Sanitarium.
Watertown	Lutheran Home for Feeble-Minded and Epileptic.

Kindergartens not represented in the foregoing tables.[1]

States and cities.	Name of kindergarten.
Alabama:	
Birmingham	Avondale Wesley House Kindergarten.
Do	Mrs. D. H. Green's Kindergarten.
Do	Presbyterian Mission Kindergarten.
Sheffield	Misses Jones and Cook's Kindergarten.
Talladega	Talladega College Kindergarten.
Tuskegee	Children's House.
Arkansas:	
Little Rock	Arkansas Deaf-Mute Institute.
California:	
Eldridge	Sonoma State House.
Los Angeles	First Cong. Church Kindergarten.
Marysville	Miss Klockenbaum's Kindergarten.
Petaluma	Pepper Kindergarten.
Redwood City	San Mateo Kindergarten.
Ukiah	Mrs. E. C. Rodwick's Kindergarten.
Colorado:	
Denver	French Kindergarten.
Pueblo	Minnequa Kindergarten.
Connecticut:	
New Haven	Miss Thos. Maud's Kindergarten.
Delaware:	
Wilmington	Miss Blanche Eaton's Kindergarten.
Florida:	
Jacksonville	Boylan Home and Industrial School for Girls.
Do	Misses Shine and Bland's Private Kindergarten.
Viking	Fort Pierce Kindergarten.
Georgia:	
Atlanta	Baptist Settlement Kindergarten.
Do	Miss Susie Griffith's Kindergarten.
Do	Jewish Temple Kindergarten.
Do	Sixteenth Street Kindergarten.
Homerville	Miss Ruth Water's Kindergarten.
Statesboro	Miss Robinson's Kindergarten.
Illinois:	
Aurora	Aurora Free Kindergarten Association.
Illinois—Contd.	
Chicago	Chicago Nursery and Half Orphan Asylum.
Do	Church of the Advent Kindergarten.
Do	Lexington Avenue and Sixty-first Street Kindergarten.
Do	McCowan Oral School for Young Deaf Children.
Do	Metcalf Kindergarten.
Do	Mosley Kindergarten.
Do	Rogers Memorial Church Kindergarten.
Do	St. Mary's Kindergarten.
Do	The Misses Spaid's Kindergarten.
Do	West Division Street Kindergarten.
Freeport	St. Vincent's Orphan Asylum.
Rock Island	Day School for Deaf.
Indiana:	
Anderson	Washington Kindergarten.
Iowa:	
Davenport	Ladies Industrial Society Kindergarten.
Glenwood	Iowa Institution for Feeble-Minded Children.
Kansas:	
Atchison	State Orphan's Home.
Kentucky:	
Farmdale	Stewart Home and School.
Frankfort	Kentucky Institute for Feeble-Minded Children.
Louisville	Kentucky Institute for Education of the Blind.
Olive Hill	M. E. Church Kindergarten.
Louisiana:	
New Orleans	Zito Free Kindergarten.
Maine:	
Eastport	Miss Robinson's Kindergarten.
Portland	Maine School for the Deaf.
Maryland:	
Baltimore	Affordby Normal School.
Do	Brown Memorial Mission.
Do	Miss James's Kindergarten.
Do	Jewish Settlement House Kindergarten.
Do	Locust Street Settlement Kindergarten.
Do	Nursery and Childs' Hospital Kindergarten.
Do	Reed Memorial Kindergarten.

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[1] See also list on p. 86.

Kindergartens not represented in the foregoing tables—Continued.

States and cities.	Name of kindergarten.
Maryland—Contd.	
Baltimore	Reid Memorial Guild Kindergarten.
Do	W. C. T. U. Mission Kindergarten.
Frederick	Maryland School for Deaf and Dumb.
Overlea	School for the Blind.
Ridgely	Ridgely Kindergarten.
Westminster	Miss Stella Knapp's Kindergarten.
Massachusetts:	
Boston	East Boston Neighborhood House.
Do	South Bay Union Kindergarten.
Do	School for the Blind.
Brockton	First Baptist Church Kindergarten.
Brookline	South End Day Nursery.
Holyoke	Our Lady of Perpetual Help School.
Lee	Charitable Kindergarten.
Lynn	Miss Chase's Kindergarten.
Do	Neighborhood House.
New Bedford	St. Mary's Home.
Taunton	Miss Marion Peck's Kindergarten.
Worcester	Adams Square Cong. Church Kindergarten.
Michigan:	
Detroit	Berean Baptist Church Kindergarten.
Do	Franklin Street Settlement Day Nursery.
Do	Reed School for Nervous and Backward Children.
Grand Rapids	Mrs. Eugene M. Holmes's Kindergarten.
Lansing	Michigan School for the Blind.
Lapeer	Mich. Home for Feeble Minded and Epileptics.
Saginaw	Miss Utella Kump's Kindergarten.
Minnesota:	
Albert Lea	Miss Edith Haupt's Kindergarten.
Minneapolis	Frau Brockmann's German Kindergarten.
Do	Miss Edith Jones's Kindergarten.
Do	Miss Bertha E. Lyon's Kindergarten.
Owatonna	State Public School for Dependent Children.
St. Paul	Protestant Orphan Asylum.
Mississippi:	
Jackson	Institute for Deaf and Dumb.
Okolona	Okolona Industrial School.
Winona	Winona Kindergarten.
Missouri:	
Fulton	Missouri School for the Deaf.
Independence	Mrs. Hamilton's Kindergarten.
St. Joseph	Wesley House Kindergarten.
Do	Miss Raffington's Kindergarten.
St. Louis	Episcopal Kindergarten.
Do	Missouri School for the Blind.
Do	Neidringham Memorial Kindergarten.
Do	Under-Age Kindergarten Association (5 kindergartens).
Montana:	
Boseman	Little Holland Kindergarten.
Nebraska:	
Nebraska City	Nebr. School for the Blind and Deaf.
New Hampshire:	
Concord	Miss M. Etta Bailey's Kindergarten.
New Jersey:	
Cranberry	The Larches Educational Sanitarium.
Jersey City	Hasbrouck's School for Girls.
Montclair	Miss Edith Baldwin's Kindergarten.
Summit	Arthur Home for the Blind.
Trenton	New Jersey School for the Deaf.
Vineland	N. J. Institute for Feeble-Minded Boys and Girls.
New Mexico:	
Alamogordo	N. Mex. Institute for the Blind.
Truchas	Methodist Mission School.
New York:	
Albany	Home School for the Deaf.
Aurora	Miss E. Judson's Kindergarten.
Brooklyn	Brooklyn Labor Lyceum Association.
Do	Cuyler Presbyterian Church Kindergarten.
Do	Gardner Memorial Day Nursery.
Do	Gillespie Memorial Day Nursery.
Do	Italian Kindergarten.
Do	Lenox Road Bap. Church Kindergarten.
Do	Little Mothers' Aid Day Nursery.
Do	Northern Day Nursery.
Do	Society of Inner Mission and Rescue Work.
Buffalo	Le Canteulx St. Mary's Institution for Deaf Mutes.
Elmira	Kindergarten Training School.
Hoosick Falls	Neighborhood House Kindergarten.
Keesville	Miss Tufft's School.
Lockport	First Free Cong. Church Kindergarten.
Malone	Nor. N. Y. Institute for Deaf Mutes.
Middletown	Grace Church Parish House Kindergarten.
Newburgh	Children's Home.
New York City	Bedford Park Cong. Church Kindergarten.
Do	Bethany Day Nursery Kindergarten.
Do	Bethlehem Day Nursery Kindergarten.
Do	Bryson Day Nursery Kindergarten.
Do	Chelsea Day Nursery Kindergarten.
Do	Cornell Memorial M. E. Church Kindergarten.
Do	Finch School.
Do	Grace Mission Day Nursery.
Do	Hebrew Day Nursery.
Do	Immanuel Ger. Luth. Church Kindergarten.
Do	Institution of Mercy Kindergarten.
Do	Institution for Improved Instruction of Deaf Mutes.
Do	Incarnation Chapel Kindergarten.
Do	Jewel Day Nursery.
Do	Kipps Bay Day Nursery.
Do	Lisa Day Nursery.
Do	Little Missionary's Day Nursery.
Do	Madonna Day Nursery.
Do	Masters School Day Nursery.
Do	"Mater Dei" Day Nursery.
Do	Mission House of St. Mary the Virgin.

Kindergartens not represented in the foregoing tables—Continued

States and cities.	Name of kindergarten.
New York—Contd.	
New Yory City.	Nazareth Day Nursery.
Do	New York Institution for the Blind.
Do	New York Institution for the Instruction of the Deaf and Dumb.
Do	New York Parochial School Kindergartens (12).
Do	Presentation Day Nursery of the Blessed Virgin Mary.
Do	Reno Margulies's School for Children with Defective Hearing.
Do	Riverside Day Nursery.
Do	St. Agnes Day Nursery.
Do	St. Agnes Chapel Kindergarten.
Do	St. Cecilia's Day Nursery.
Do	St. Ignatius Loyola Day Nursery.
Do	St. John's Day Nursery.
Do	St. Joseph's Day Nursery.
Do	St. Mary's Kindergarten.
Do	St. Michael's Day Nursery.
Do	St. Paschal Day Nursery.
Do	St. Vincent de Paul Day Nursery.
Do	San Salvatore Italian Mission.
Do	Seventh Street M. E. Church Kindergarten.
Do	Silver Cross Day Nursery.
Do	Speyer School.
Do	Sunbeam Day Nursery.
Do	Sunnyside Day Nursery.
Do	Wayside Day Nursery.
Do	Wilson Industrial School Day Nursery.
Do	Wright Oral School.
Do	Zion Lutheran Church Kindergarten.
Oxford	Miss Bessie Hogan's Private Kindergarten.
Rochester	Wes. N. Y. Institution for Deaf-Mutes.
Sag Harbor	Russell Sage Playground Association.
Syracuse	State Institution for Feeble-Minded Children.
White Plains	Chatterton Hills Cong. Church Kindergarten.
North Carolina:	
Clinton	Mrs. Maggie Moore's Kindergarten.
Mount Airy	Laurel Cliff Cobo Mills Kindergarten.
Raleigh	St. Mary's School Kindergarten.
Do	School for the Deaf and Blind.
Do	State School for the Deaf and Blind.
North Dakota:	
Devils Lake	N. Dak. School for the Deaf.
Grafton	Institution for Feeble-Minded.
Ohio:	
Cleveland	Euclid Heights Kindergarten.
Do	Laurel School.
Columbus	West Mound Street Kindergarten.
Do	Ohio State School for the Blind.
Do	State School for the Deaf.
Lima	Central Kindergarten.
Marietta	Miss Helen Snackard's Kindergarten (3).
Oberlin	Oberlin Training School Kindergartens (3).
Oklahoma:	
Enid	Institution for Feeble-Minded.
Guymon	Miss Elizabeth Chorn's Kindergarten.
Oklahoma—Contd.	
Muskogee	Miss Katheryn Keating's Kindergarten.
Oregon:	
Salem	Oregon School for the Deaf.
Do	Oregon School for the Blind.
Pennsylvania:	
Allentown	St. Paul's Lutheran Kindergarten.
Altoona	Miss Hotchkin's Kindergarten.
Chester	The Ridley Park Kindergarten.
Easton	St. John's Lutheran Kindergarten.
Edgewood	W. Pa. Institute for the Deaf and Dumb.
Endeavor	Mrs. N. P. Wheeler's Kindergarten.
Elwyn	Pennsylvania Tr. Sch. for Feeble-Minded Children.
Erie	Miss Lloyd's Kindergarten.
Overbrook	Pennsylvania Institution for the Blind.
Philadelphia	Mount Airy Kindergarten.
Do	Neighborhood House Kindergarten.
Do	Pennsylvania Institution for the Deaf and Dumb.
Pittsburgh	Methodist Deaconess Home.
Do	Thurston-Zleim School.
Do	W. Pa. Institution for the Blind.
Pottsville	The Free Kindergarten Association.
Royersford	Miss Jessie Townsend's Kindergarten.
Scranton	Pennsylvania Oral School for the Deaf.
Swarthmore	Swarthmore School and Kindergarten for the Deaf.
Valencia	Lillian Home Kindergarten.
West Chester	Miss McNeill's Kindergarten.
Wilkes-Barre	Miss Ayre's Kindergarten.
Wynnewood	Hathaway School.
Rhode Island:	
Providence	R. I. Institution for the Deaf.
Do	St. Mary's Orphanage.
South Carolina:	
Allendale	Gallaway Hall Settlement Kindergarten.
Do	Haines Institute.
Camden	Pine Creek Mill Kindergarten.
Charleston	South Side Kindergarten.
Do	Y. W. C. A. Kindergarten.
Lancaster	Miss Jones's School.
Walhalla	Walhalla Mill Kindergarten.
South Dakota:	
Sioux Falls	S. Dak. School for the Deaf.
Tennessee:	
Oakdale	Miss Amanda Kimmder's Kindergarten.
Texas:	
Angleton	Mrs. William's Kindergarten.
Austin	Deaf, Dumb, and Blind Institution for Colored Youths.
Do	Texas School for Defectives.
Anson	Miss Colbert's Kindergarten.
Brackettville	Brackettville Kindergarten.
Dallas	Dallas Training School Kindergarten.
Utah:	
Ogden	Utah School for the Deaf and and Blind.
Salt Lake City	Phillips Cong. Church Kindergarten.
Virginia:	
Falls Church	Virginia Home and Training School for Feeble-Minded.
Harrisonburg	State Normal School Kindergarten.

Kindergartens not represented in the foregoing tables—Continued.

States and cities.	Name of kindergarten.	States and cities.	Name of kindergarten.
Virginia—Contd.		Washington—Con.	
Leesburg	Miss Louise Davis's Kindergarten.	Walla Walla	Miss Gregory's Kindergarten.
Norfolk	St. George's School Kindergarten.	West Virginia:	
		Huntington	Miss Clara Nichol's Kindergarten.
Richmond	The Alice Parker Kindergarten.	Wisconsin:	
		Delavan	Wisconsin School for the Deaf.
Roanoke	Roanoke Kindergarten Association.	Janesville	Wisconsin School for the Blind.
Staunton	Virginia School for the Deaf and Blind.	Milwaukee	Miss Margaret Sammond's Private Kindergarten.
Washington:		Racine	Day School for the Blind.
Vancouver	State School for the Blind.		

III. KINDERGARTENS AS VIEWED BY SUPERINTENDENTS, PRIMARY SUPERVISORS, AND FIRST-GRADE TEACHERS.

In June, 1913, the Commissioner of Education sent to 127 cities the following two inquiries, the first to superintendents of schools, the second to primary supervisors and first-grade teachers under them:

> Your city has, I believe, had kindergartens as a part of its public-school system for several years—long enough to test their value as a part of the system of public education. The Bureau of Education wishes to ascertain, as nearly as possible, just what this value is. To assist in this, will you kindly write me in detail your candid opinion in regard to the matter?
>
> I desire especially to know what advantage children in the primary grades of the public schools who have had kindergarten training have over those who have not; also, what adjustments, if any, need to be made between the kindergarten and the lowest primary grades. Your experience and observation should enable you to speak with some degree of authority on this subject. May I therefore ask you to write me fully in regard to both points?

The response to these inquiries was unusually generous. In a number of cities the school authorities instituted careful investigations among their own supervisory and teaching force, so that the opinions received represent considerably more than a mere personal statement from the administrative officer or teacher who replied. It is obviously impossible to print all the replies, or even the most interesting; but an attempt has been made to present a few of the opinions that seemed to be, for one reason or another, particularly timely, representative, or significant in idea or expression.

In general, the sentiment as revealed in these replies was overwhelmingly favorable to the kindergarten; there was surprising agreement as to the benefits of kindergarten training. It is not easy to determine whether those failing to reply have been unable to obtain kindergartens or are actually opposed to the idea. It is not unfair to say, however, that notably favorable replies were received from those cities whose educational systems have long been known for their general excellence; and in many such cities advocacy of the kindergarten amounts to an enthusiasm rarely expressed with regard to any other phase of school work.

Particularly interesting reports, mainly of favorable tenor, were received from teachers in the following cities: San Diego, Cal.; Jamestown, N. Y.; Mansfield, Ohio; Grand Rapids, Mich.; Cleveland, Ohio; Sheboygan, Wis.; Akron, Ohio; New Haven, Conn.; New

Orleans, La.; Jersey City, N. J.; Pittsburgh, Pa.; South Bend, Ind.; Kalamazoo, Mich.; Omaha, Nebr.; Bayonne, N. J.; Providence, R. I.; Troy, N. Y.; New Britain, Conn.; Minneapolis, Minn.; Manchester, N. H.; Richmond, Va.; Des Moines, Iowa; Superior, Wis.; Dayton, Ohio; Cambridge, Mass.; and Sacramento, Cal. In most instances only one opinion out of many excellent ones from a city can be given. Unfavorable opinions were received from groups of teachers in two cities, one in Pennsylvania and one in Virginia.

Very complete investigations were made by superintendents or supervisors in New York, Philadelphia, Louisville, Baltimore, Racine, Passaic, N. J., Buffalo, Utica, N. Y., Tacoma, Wash., and Denver. The material thus gathered is of peculiar value, representing first-hand experience, and such of it as may not be used in this bulletin has been filed for reference and possible further use.

The Denver reply is fairly typical of the more complete inquiries. In that city the supervisor of kindergartens and primary, Miss Grace Parsons, obtained the opinions of five representative Denver teachers. Two were uncompromising advocates of the kindergarten, who felt that if there was any need for adjustment it was with the primary; that there could be, as one expressed it, "a more liberal use of objects and symbols in primary work." A third teacher thought the kindergarten should make more effort to give the child a definite task and hold him to it. Another believed strongly in kindergarten training, but outlined a rather elaborate plan of readjustments she thought desirable. The fifth teacher was plainly skeptical of certain phases of kindergarten training. "I believe," she writes, "that a child who comes from a home where a mother has the time, ability, and desire to live with her children can and does do just as good work in first grade without ever having been in kindergarten." She points out two customary criticisms of some kindergartens: (1) Too great freedom, making it difficult for the first-grade teacher to get the children broken of ''noisy habits"; (2) excessive dependence of the children upon the director, so that when they come to first grade they find it hard to settle down and do for themselves. This teacher concedes, however, that the kindergarten-trained child "is more at ease, more graceful for having had the rhythm work, and tells a story more easily. His handwork, if not too much supervised, is better than that of the child who has not been to kindergarten, and he dramatizes more naturally." But she adds that "the first-grade child who has not been to kindergarten gets it all so very quickly that I often think the time spent in kindergarten would be better spent out of doors, provided all other home conditions are as they should be." Of course this teacher would readily admit that "all other home conditions" seldom are as they should be.

After summarizing the opinions of her teachers, Miss Parsons concludes as follows:

> I feel that every grade teacher should have the kindergarten principles in her training, and that the kindergarten teacher should study in normal schools and be prepared to do either kindergarten or grade work. I further feel that one supervisor should have charge of the kindergarten and primary grades, as in Denver. Primary teachers who desire it should be allowed to work with some good kindergartner for a year, and the kindergartner should be allowed to do grade work in the same way. This will make each realize that we can not have two conflicting, opposing systems in one school, but that the teachers must agree on some common plan of procedure. This has been done to a great extent; the kindergarten has influenced the whole school movement to a marked degree, and the child study movement, the new psychology movement, and the new methods in the grades have in turn modified the kindergartens beneficially.
>
> Whatever the age may be that our children attend school, there should be a pretextbook period in which the children are brought into vital contact with real experiences of life and the things in their immediate environment, under a trained adult. A child who is unable to arrange blocks and sticks, to use sand and clay, to play simple games with his fellows, is not ready for the detailed work of the school. The kindergarten is a place for the testing and trying out of children, and for the application of remedial measures, the aim being to develop the individual as harmoniously as possible. No child should be placed in a first grade until he is ready to attack its problems with ease and vigor, and until his body shows decided powers of coordination and control. The kindergarten corresponds to that long period of race development before schools were heard of, and any tendency to formalize or curtail freedom in the kindergarten will spoil its value as a response to child needs at this culture epoch period.

The Tacoma (Wash.) opinions were particularly interesting, because Tacoma does not have kindergartens as part of the public school system. One teacher prefaced an otherwise favorable opinion by stating that she "very much doubted the advisability of confining the average child in any sort of school much before he is 6 years of age." Another conceded the advantages possessed by children who came from private kindergartens into her school, but questioned how much of this was due to the higher home standards of parents who were able to afford private kindergartens. The other replies were unqualifiedly favorable. One teacher declared:

> The advantage possessed by kindergarten-trained children came home to me when, after several years experience with children so trained, I took a school in which the pupils had not had kindergarten work. The unresponsiveness of these children was something I could not at first account for.

Few definitely hostile opinions are expressed, as noted above. Occasionally, however, a city is heard from where there seems to be a settled antipathy to the kindergarten idea. The explanation is doubtless to be found in some especially unfortunate experience with inferior kindergartens. The following from a western superintendent speaks for itself:

> About 12 years ago the school board established kindergartens throughout the city. They added enormously to the expenses of the school department, and in many cases,

I am told, were of poor quality. An investigation was precipitated in which it appeared that children without any kindergarten training did even better in the primary grades than children who had had kindergarten experience.

The upshot of it was that kindergartens were thrown out even more abruptly than they were introduced, and since that time the mere mention of public kindergartens has had an effect upon the public mind similar to that produced upon the bovine species by the waving of a red flag. So you see I am not in a position to speak with great assurance on the kindergarten question.

Less severe instances of the effect of purely local conditions are noticeable in several cities, and need always to be taken into account in reading various opinions. Thus one teacher in Norfolk, Va., frankly declared that, judging from the children she had taught in first grade, she considered those who had had kindergarten training to be "superficial, and with a poorly balanced nervous organism" as a result of the work; while another teacher in the same city explained:

Since the school age in Virginia is 7, it is difficult for us to judge kindergarten children fairly. Seven-year old children who come to us from kindergartens have either remained there too long or have been out one or more half terms before we get them. In either case we do not get kindergarten influence at its best.

My own experience during the past two years has been in a crowded slum dictrict, largely with foreign children—Greeks, Italians, Syrians, and Russians. I find that these children, who have had kindergarten training, have a much better command of English, are more courteous, and respond more quickly to all the demands of the schoolroom than other children.

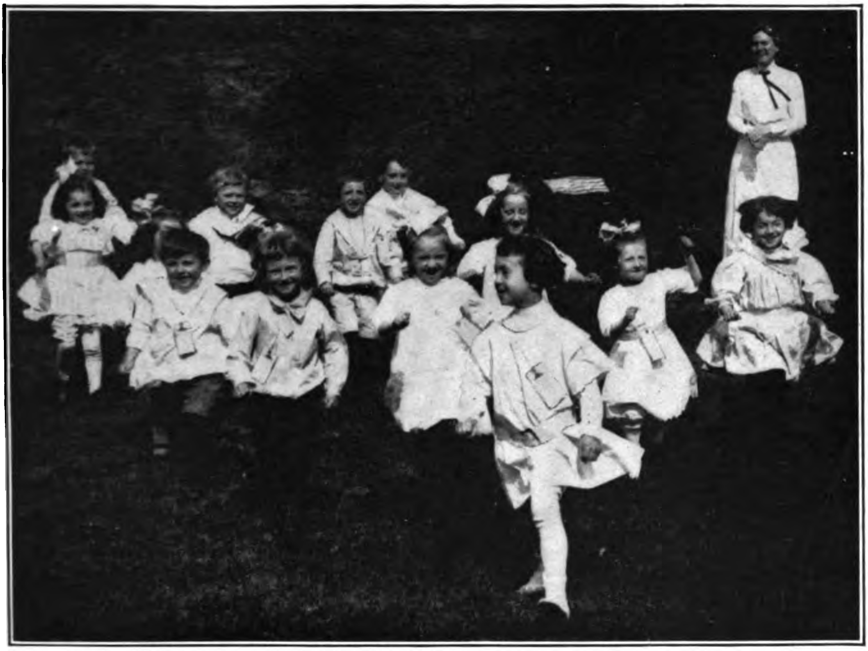
In striking contrast to the skepticism of a few of the letters is the decisive statement of Supt. McDaniel, of Hammond, Ind., which is typical of many replies received:

We have had the kindergarten as part of the regular school work in every building in our city for 20 years. We feel that its results are vital; that children enter the first grade more intelligent than those who have not had that training; that their minds and bodies respond to the needs of the regular work to such an extent that the time necessary for adjustment is materially decreased.

A. OPINIONS OF SUPERINTENDENTS.

F. E. Spalding, Newton, Mass.—Kindergartens have been maintained throughout the city of Newton about 20 years, and are accessible to practically all children in the city. We believe the kindergartens to be a valuable department of our public educational system. Two years ago I made formal inquiry of all the first and second grade teachers regarding the value of kindergarten training as they observed it in the children that came to them. About three-fourths of all children entering our primary grades have spent from a year or a year and one-half to two years in the kindergarten. The replies of our first and second grade teachers to my inquiry were practically unanimous in favor of the kindergarten training.

C. Edward Jones, Albany, N. Y.—We have had kindergartens in our city for a good many years. We would hardly know how to maintain a public-school system without them. If all home conditions were ideal and children could have free play and outdoor exercise until they were 6 years of age, the need of the kindergarten would not be great. But no such conditions exist in any city. The kindergarten, therefore,

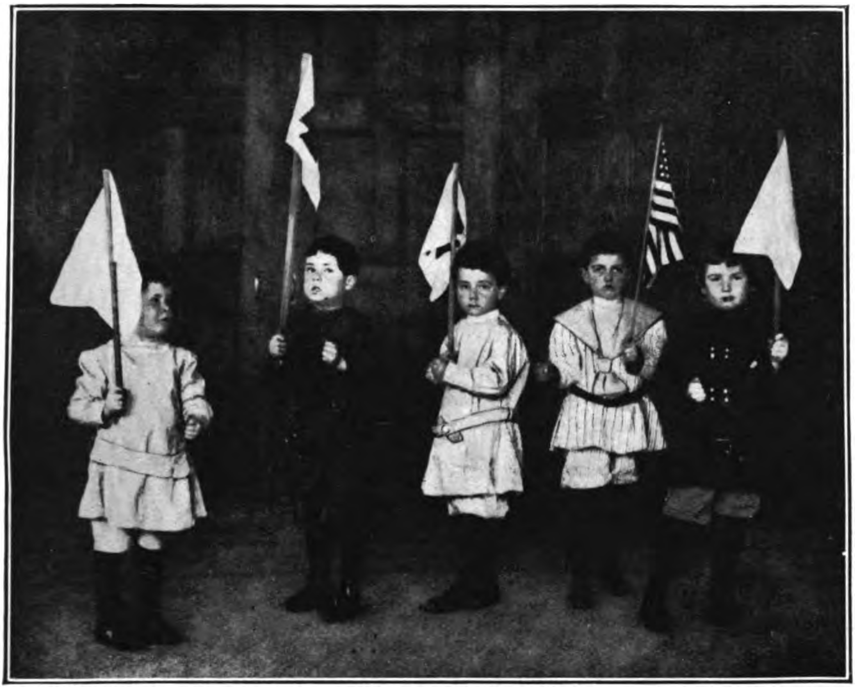


A. "WHO'LL BE THERE FIRST?"

Such active games tend to develop freedom and mastery of the body.

B. "PLAY IN THE OUT-OF-DOORS."

Kindergarten endowed in perpetuity by Dr. Cornelius N. Hoagland, Brooklyn, N. Y.



A. "THREE CHEERS FOR THE RED, WHITE, AND BLUE."
To the call of the flag the erect heads and lifted chests make loyal response.

B. "ONE-TWO, ONE-TWO, MARCH ALONG."
Rhythmic movements help the body to be a free and graceful instrument of the mind.

supplements the home. It gives training in how to work and how to play in such a way as to be of value in the future work, and in addition to this it also supplements what in many cases is a meager home life.

William L. Welsh, district superintendent, Philadelphia, Pa.—The value of the kindergarten to any community depends upon two things: (1) The character of the neighborhood; (2) the skill and efficiency of the teacher having charge of the kindergarten.

A district in which the people are possessed of an average income, and where the mothers have abundant time to care for the children, has no need of a kindergarten. It is better for the children that they should be much out of doors, engaged in play and such physical exercises as will develop them bodily than to be compelled to remain indoors for the small mental and social gain which they would receive under the care of the teacher. It is my opinion that we are not placing sufficient emphasis on the value of a strong physique for young children, and that we are overemphasizing the importance of early mental culture. The preeminent requirement for our boys and girls is that they should lay the foundation for good physical health.

In districts having congested population of the lower classes, where the people are much restricted in means and the mothers have not the time to give their children that attention and care which they should have, a kindergarten is very helpful. It provides a place where the children are safe from the dangers of the street and where they may receive instruction and training which their mothers would be unable to give. Usually this class of children have only the street for a playground, and therefore would receive little physical development by any play exercise at home. I should, therefore, favor the establishment of kindergartens in these neighborhoods in sufficient numbers to accommodate all the children of appropriate age.

Under the second head I would say that it is my opinion that the benefit of a kindergarten in any district depends almost entirely upon the manner in which it is conducted. Under a good teacher it may be very useful; under a poor one it is almost valueless. I discover that the opinions of the principals of my district on this question vary almost exactly in proportion to the efficiency of the teacher having charge of their kindergarten. If they have a good teacher, their judgment is favorable; if they are unfortunate enough to have a poor one, they think the reverse. My personal observation coincides with the impressions of the principals. Children who are one or two years under the care of a good woman are better prepared for the work of the following grade and are more alert and resourceful than those who have missed this influence. Under a poor teacher, they acquire bad habits of behavior and imbibe wrong ideas of school order and their relationship to the teacher and fellow pupils.

Where the conditions are favorable and the teacher is of at least average ability, the advantages of kindergarten training are many. Considered from the standpoint of scholastic training, I believe that the children are usually more self-reliant, original, and more apt to take the initiative. They have a quicker understanding, a little more power to think, and therefore usually make more rapid progress in their studies. Their powers of observation are perhaps keener, and they have a better general knowledge. They recognize form and color more readily and have a somewhat better use of their hands. They have a better command of language, are more proficient in counting, and their scholastic standing is apt to be higher. Some principals do not agree to this last statement.

On the other hand, children trained in kindergarten, when they enter the primary grades, are not so amenable to restraint and are, therefore, as a class more difficult to discipline. They are restless, desire too much attention, and seem to require some time to get down to real work. The majority of primary teachers agree that in the beginning children who have passed through kindergarten are more difficult to control.

The kindergarten has an influence socially on the boys and girls. The pupils in the grades following respond more quickly to the little courtesies of life. They associate more freely with other children and their social training reaches up through the grades. They possess more of a community spirit and thus serve to unify the interests of the class.

Taking conditions in the large as we find them in our cities, there can be no doubt that the kindergarten is an important element of our school system. I believe that it should be retained, but that judgment should be used as to the neighborhood in which it is established, and that the teachers should be selected with regard to their adaptation to this particular work.

Herbert S. Weet, Rochester, N. Y.—We have a kindergarten in every elementary public school in Rochester. Personally, I have every confidence in these kindergartens. So far as any definite information is concerned, we can not prove that children who have had kindergarten training do, through the regular grades, any better work, so far as immediately measurable results are concerned, than do the children who have not had such training. I have a strong impression, however, that this is due more to our inability in the grades to avail ourselves of the kind of work which the kindergarten has given than it is to the absence of valuable training on the part of the kindergarten. Whether we shall ever be able to prove through school records that the child trained in the kindergarten is more efficient along those lines in which the school can adequately test for efficiency I do not know. I believe, however, that the beautiful spirit of our kindergartens gives a joy and a happiness to childhood, an impetus in the way of social cooperation and a training in the way of kindness, courtesy, and other essential qualities that fully justify our whole expenditure in it.

D. J. Kelly, Binghamton, N. Y.—I have no sympathy with the kindergarten as a side issue to our regular school work or, as some one has called it, a "de luxe department" in our educational system. The work should be so planned and conducted as to offer an efficient connecting link between the home and the regular first-grade work, and should articulate as closely with the first grade as the first grade articulates with the second.

In this city I found children were permitted to enter the kindergarten at 4 years of age and at the age of 6 were passed on to the first grade regardless of ability. This meant that many children remained in the kindergarten two years and came to look upon the school as a very monotonous institution. With promotion on the basis of age alone, the work of the kindergarten was of very little help to the first-grade teacher, since the material coming to her was lacking in uniformity.

During the past year I have changed this arrangement so that children enter the kindergarten at 5. The course is planned for one year, the first half pure kindergarten work and the second more of a connecting class. Certain standards were established for our promotions from the kindergarten, just as from any other grade, and these standards were based entirely upon proficiency, instead of age. In other words, when a child reached a certain degree of proficiency he was put into the first grade regardless of his age or how long he had been in the kindergarten. Some children reach this state in half a year and some in a year and a half. It meant, however, that when the first-grade teacher received the product of the kindergarten it had the same degree of uniformity as any product of the school.

J. V. Brennan, Ironwood, Mich.—We have had kindergartens as a department of our public-school system for a number of years. This community consists of many nationalities and the people are practically all workers in the iron mines or about the iron mines. Families are usually large and the kindergarten here is a second home to the majority of the children. It is a place for the children to live as well as to learn. Very many of the children learn to speak the English language in the kindergarten. The kindergarten gives these children a right attitude toward schools and school work. In fact, without the kindergarten as an adjunct to the home, school progress here would be considerably retarded. The children who enter the grades from the kindergarten do much better work, as an average, than those who do not get this training. In my judgment, the kindergarten is an exceedingly valuable part of a school systen, especially so in a working community where families are usually large and the parents occupied in the matter of making a living.

A. R. **Brubacher**, Schenectady, N. Y.—We are now maintaining 18 kindergarten classes, each one in charge of a specially trained teacher with a full equipment of kindergarten supplies and apparatus. From an acquaintance of five years, I offer the following opinion regarding the value of kindergarten work:

First. A kindergarten training is unnecessary and an unwarrantable expense of time and energy on children who come from well-regulated homes with opportunity for outdoor life and first-hand contact with nature and the ordinary mechanisms of daily life.

Second. Kindergarten training is of real value where the home conditions are artificial. I have especial reference to city homes where children have no outdoor freedom and to the homes of the wealthy where the child is either neglected or given into the hands of servants.

Third. Kindergarten training is especially valuable in the case of children who come from very poor homes. This applies especially where parents are either morally unfit or are so poor that they can not give the training demanded by common decency.

Gerard T. **Smith**, Peoria, Ill.—Kindergartens were introduced into the Peoria public schools five years ago by popular vote. The first year we had only 6 schools. They have increased at the rate of one or two schools each year until we now have 13, with the prospect of the introduction of new ones until each of the 19 elementary schools shall have a kindergarten connected with it. This expansion of the department in itself answers the question as to whether we believe there is value in kindergartens as a part of the public-school system. The introduction was made in the face of scepticism and general disbelief in their educational worth, by primary teachers but this attitude has almost entirely changed. Personally, I consider that the undefinable influences are very marked in our schools. Moreover, I find that our children enter the subsequent grades with much better mental poise, as well as ability to think and act, than children who have not been in kindergartens. In our intermediate grades we now have fewer failures, and on the average our children are somewhat younger than formerly. While other causes may contribute somewhat to this, I attribute it largely to the influences of the kindergartens.

F. H. **Beede**, New Haven, Conn.—We have had kindergartens in New Haven for 20 years and I believe strongly in the value of their work. In this line of work, as in any, mistakes will be made and mistakes have been made; nevertheless, the main work of the kindergartens is, in my opinion, wholesome and useful. Fifteen years ago, first-grade teachers preferred to have children directly from the home, without previous school experience, rather than to have children from kindergartens. Their feeling was that kindergarten children had not learned prompt obedience and the formalities of school routine. To-day probably every first-grade teacher in our city would prefer to have kindergarten children. Their testimony is that these children have more initiative, more experience, a larger fund of school information, and a habit of doing school work in conjunction with other children. Their social instinct has been developed. The old-fashioned teacher who wants mainly to "hold down" school children does not want kindergarten children. The up-to-date teacher whose thought is to develop her children, to enlarge their power of initiative, and to develop responsiveness on their part, asks every time for kindergarten children.

There is the further thought that in the foreign districts, kindergartens are doing a splendid work in taking children as crude material from the homes and introducing them to life under the leadership of a few fine women.

M. A. Cassidy, Lexington, Ky.—Twenty-six years ago the kindergarten was made a part of the Lexington public-school system. This city was, therefore, one of the first to take this important step in educational progress. I was then superintendent, and ever since I have watched with great interest kindergarten growth and development. Within that time, a large number of children have been promoted from these kindergartens to the primary schools, and it has been my pleasure to compare their progress with that of those who have not had the advantage of kindergarten training. Beyond doubt, the progress of kindergarten-trained children is much more satisfactory in every way.

In Lexington the Montessori plan is used to make the adjustment between the kindergarten and the lowest primary grade. This work is supplemented by such primary work as will better prepare the pupil to enter upon the regular grade work. This has been very successful here, and I could give many instances of dull minds awakened through the use of the Montessori material.

C. E. Chadsey, Detroit, Mich.—My experience with kindergartens now extends over a period of years, both in Denver and in Detroit, and I can express myself most emphatically in favor of very liberal expenditures for kindergarten purposes. While the results of the kindergarten are not always tangible, that is, they can not always be measured with reference to the specific work accomplished in the elementary grades, I am convinced that the general value to the child through increasing his stock of general emotions, particularly with reference to his social relations with his fellows, justifies the expenditure incurred.

The attitude of our kindergarten teachers in recent years has greatly increased the value of the kindergarten. The appreciation of the social significance of the work, and the saner methods used, justify one in having a most optimistic attitude concerning the future usefulness and improvement of the kindergarten.

H. F. Leverenz, Sheboygan, Wis.—The schools of this city would not appear complete, and would not be complete, without the kindergartens. They have been a part of the public-school system of this city since 1890; they have always been popular, and they have been liberally supported, although a few individuals have occasionally questioned their value. No one who knows kindergartens will question their value in sense training and also physical and moral training. Parents who have had children in the kindergarten are often found giving testimony of these values without intending to do so.

The kindergarten introduces the child into school life in the proper manner. This point can not be overestimated, for this attitude toward school life accompanies the child to and through the succeeding grades. The kindergarten is also the means of bringing parents in contact with school more than any other grade.

Jeremiah Rhodes, Pasadena, Cal.—Pasadena has well-organized, thoroughly equipped, and modern kindergartens. I believe thoroughly in the kindergarten idea and feel that our experiment in Pasadena has abundantly proved the work of the kindergarten in socializing the community; in bringing children in the best way from the home to the primary schools; and in demonstrating the necessity for liberalizing our ideas of public-school administration and teaching. Without question we are getting greater value from the kindergartens as organized in our city than from any other single department of our school work.

Our kindergartens are in bungalows, especially constructed for the purpose, and at the same time definitely connected with our schools, each being located on the corner of the campus.

Allen P. Keith, New Bedford, Mass.—In September, 1897, kindergartens were first opened in our schools, and 4 were maintained until 1909. Because of constant friction between the kindergartners and the first-grade teachers, the kindergartens were never extended in the system.

When our course of study was revised in 1908, we aimed to correct this misunderstanding by establishing a class to be known as "kindergarten and subprimary class." We admitted children to the kindergartens at 5 years of age, and to the subprimary at 5½ years. The subprimary class attend the morning session and the kindergarten class the afternoon session. We now have 12 such classes in the city, and they are very popular in the districts in which they are located, both with the parents and with the teachers. The first-grade teachers are now glad to get children who have had this previous training, and we look for the extension of the work.

Ella Flagg Young, Chicago, Ill.—With respect to a better relation between kindergarten and first grade in our school system, it may be said that the influence of the kindergarten spirit and methods upon the whole of elementary education, and particularly upon primary education, has been so great during the last 25 years as practically to unite kindergarten and first-grade classes. The transition is certainly not greater than that between elementary and high school or between high school and college. Wherever special provision has been made to join kindergarten and first-grade by some such expedient as an intermediate class, the plan has been abandoned. Such classes have proved undesirable and unnecessary.

James M. Tilley, assistant superintendent, Terre Haute, Ind.—In our system pupils who have had kindergarten training are credited with: (1) Coordination of muscles—ability to work with hands; (2) freedom of association and expression; (3) some power to take "orders" and to visualize; (4) some knowledge of color, construction, rote singing, and rhythm; (5) an enlarged and intensified child life which forms the basis for habits of politeness and service.

In our system we provide for the above advantages through classification. Each first primary room has at least two classes—1C and 1B. All entering pupils are classified as 1C; in a month or so the stronger pupils, with or without kindergarten training, are classified as 1B's and at the close of the term (5 months) they are promoted to 1A. The slow pupils at the same time become 1B's. In this way the pupils with kindergarten training are in no way hindered in their progress.

Frank D. Slutz, Pueblo, Colo.—1. We asked each of our first-grade teachers this question, Do you consider that children who have had kindergarten training do better first-grade work than those who have not?

Nine teachers answered. Out of the nine two said "No" and seven said "Yes."

2. The following general suggestions were made by the teachers:

(*a*) If we might have a better coordination of kindergarten and primary work, we would get better results.

(*b*) Kindergartners do not study primary conditions enough nor do the primary teachers know what to expect or require of the kindergarten children.

(*c*) There is great need of a beginner's room.

(*d*) The teachers agree that the kindergarten is valuable in the following respects: Children are made happy and joyful in songs and games. The kindergarten is a great help to the home. The kindergarten is responsible for some gain in musical control.

The teachers also agreed that the following are arguments against the kindergarten: It has no definite purpose; it is not always well disciplined, and the children are not encouraged to do independent work.

Otis Ashmore, Savannah, Ga.—Replying to your inquiry concerning the effects of kindergarten training upon the pupils of the public schools, I will say that we do not have kindergartens connected with public schools in Savannah, but there is a very good system of private kindergartens here, nearly all of whose pupils go through our public schools later on in their course. A few years ago I made an exhaustive investigation of the points at issue. I assumed that if the kindergarten training was of any special benefit to the child, it would be revealed in his attainments in scholarship and deportment in the grammar schools. Theoretically, kindergarten training should increase the powers of the mind, especially in the domain of perception and memory; and those qualities which are usually embraced under the head of deportment should also reveal the effects of the cultural work done in the kindergarten. My plan of procedure was to adopt measures to eliminate the personal equation and all prejudice, and to compare the records of a year of all children who had attended a kindergarten with the records of those who had not attended a kindergarten. The averages of these two groups were taken by schools and then consolidated. At the close of the year after the records had been made and recorded this comparison of the scholarship and deportment records was made. Every precaution was taken to make the investigation fair and exhaustive, and I am sure that these ends were attained.

The results were interesting. In some schools there was a slight indication in favor of the kindergarten group, and in others a slight indication in favor of the nonkindergarten group. The consolidation of the results showed for the whole city almost an exact balance. While the balance was very slightly in favor of the nonkindergarten group, it was so slight that it was not at all significant. The inference to be drawn from this investigation is that any benefits which may have been given to children by kindergarten training in Savannah were not revealed by this investigation.

Final conclusions should not be made from this investigation, for behind it all still stands the question, May not kindergarten training give to the child qualities which this test does not reach, and may not similar investigations in other cities, and even in our own city, show different results? From my observations, however, I do not think the results are far from the truth in Savannah. The kindergarten child does, indeed, have some theoretical advantage over the nonkindergarten child along certain lines which are very obvious, but the nonkindergarten child, especially the child of our mild southern climate, with its outdoor freedom and opportunities for self-activity and self-direction, also has some advantage over the child who may be too much restrained and directed. It is a large question, with much truth and much error combined in claims on both sides.

A. E. Kagel, assistant superintendent, Milwaukee, Wis.—We have a kindergarten in each of our public schools; in two of our schools the number of children entitled to admission is so large that we are obliged to have two kindergartens in each of them. Our teachers have all been trained in normal schools. We put particular emphasis upon language and sense training, rhythms and music. Children who have had one year's training in the kindergarten easily finish the first grade by the time they are 7 years old; that is, they do first-grade work in 1 year. In schools where a large number enter the school at the age of 6 years, the first-grade teachers are anxious to get those children who have had a year's training in the kindergarten, rather than those who just come off the street, because they take directions better, are more alert, and are able to distinguish forms better, and hence learn to read and spell more readily. Besides, the hand-training they have received makes them more proficient writers, and their general conduct is better, particularly in their dealings with each other.

In many of our schools we have organized mothers' clubs, in order to bring the mothers early into harmony with the school and to get their cooperation. Excursions to neighboring shops, to parks, and games played outdoors constitute part of the kindergarten program. In a number of kindergartens 10-o'clock lunch, consisting of milk and crackers, is served. The expense is 5 cents a week for each child. This money is either raised by school entertainments or is contributed directly by the children.

We consider the kindergarten indispensable for all classes of children. It is here that the child gets his first lesson in democracy and social obligation.

J. M. H. Frederick, Cleveland, Ohio— Until the present year Cleveland had a supervisor of kindergarten work. This year we have aimed to combine the supervision of the kindergartens with the supervision of the grades. Our purpose has been to unite this special activity more closely with the regular school work. As a result I think our kindergarten teachers feel that they are more essentially a part of the school system than ever before, and the elementary teachers have seized the opportunity afforded them to incorporate in their work a large measure of modified and adapted kindergarten devices and methods. The trial, to be sure, has been brief, but the results appear to be better even than we had anticipated.

The kindergarten is no longer a thing apart from the elementary schools in Cleveland. There is a growing sentiment here that if a child could have but eight years of school life, it would be better to begin with the kindergarten and close with the seventh grade, than to begin with the first grade and finish the eighth. I think that there is not so much need that the kindergarten work shall be adjusted to the primary grades as that the primary grades shall be adjusted to the kindergarten idea.

My observation for many years of the kindergarten-trained child in the regular school has convinced me thoroughly that the work not only gives greater power, but what is more important, it begets the true attitude to life and society.

B. OPINIONS OF PRIMARY SUPERVISORS.

Fannie B. Griffith, St. Louis, Mo.—Good kindergarten training, which wisely and sympathetically directs and utilizes the child's active impulses and love of play, provides for little children an easy and happy transition from the freedom of the home, with its more or less conscious tuition, to that of the school where less freedom can be allowed and where the tuition is more conscious, purposeful, and systematic.

A child who has had training in a good kindergarten gives practical evidence of it when he begins primary work. Comparing him with a child who has not had this training, I should say that, as a rule, he uses his hands more deftly, has a better idea of form and number, expresses his thoughts more freely in spoken language, is more self-confident, exercises more self-control, adjusts himself more readily to new conditions, follows directions more intelligently, is more observant and attentive, more resourceful in amusing and helping himself, and has a better idea of the proper way to conduct himself in social intercourse with his equals.

In discussing the matter of needed adjustments between the kindergarten and the lowest primary, it is encouraging to note that the breach between these two departments of instruction has been greatly lessened. Some 20 years ago the old order of primary education, which has been criticised for formalism in instruction and repression in management, began to give place to the new, and the work has since been more or less in a state of flux. The nature, needs, and interests of the child have been studied and an effort made to adapt the work to meet the needs of childhood The primary teacher, as well as the kindergartner, has for her guiding principle the vital principle in a child's development, his self-activity. While the formal subjects of the primary grade—reading, writing, spelling, and arithmetic—differ greatly from kindergarten work, the content of the modern readers and story books make so strong an appeal to the child's interest, and the methods of teaching the various subjects are so interesting that the child from the kindergarten beginning first-grade work enjoys his new work quite as much as that which he has left.

Ethel Wagg, Passaic, N. J.—If the kindergarten work has been of a poor quality I doubt if children with kindergarten training have any advantage over those without it. By poor quality, I mean work of such a character that bad school habits are formed, for instance, little discipline, slovenly manual work, and so much memory work attempted in the way of songs, folk dances (with more songs), and verses for every season, day, and duty, that the majority of the children form the habit of mumbling the words they don't know and of depending on the few bright children who are leaders to carry them along.

Children who have been in such a kindergarten are to be pitied, but not more so perhaps than the first-grade teachers to whom they will be promoted. I have seen a kindergarten which approximated the above. I believe, however, that they are rare.

On the other hand, when children are promoted from kindergarten to first-grade with 5 months' or a year's training in obedience, cooperation, and good manners, they are much easier to manage in a class of 40 or 45 than children who have not had this training.

Children who have been taught to be attentive and observing in kindergarten learn to read in first grade with greater rapidity than those who have not received this training. If through the kindergarten work a reasonable motor control has been secured, the work of learning to draw and write is greatly lessened for the first-grade child. I believe that, with common sense, kindergarten-trained children are at a real advantage over those of the same degree of mentality who have not received this training, namely, in their knowledge of general school life and in their ability to take the work more easily and rapidly.

A. M. Fosdick, principal, Franklin School, San Diego, Cal.—The primary teachers of Franklin School are unanimously in favor of the kindergarten, in which opinion I heartily concur. They say that through experience they are positive that those children who have had the kindergarten work have marked advantages over those who have not, and name the following as perhaps the more salient points of advantage: (1) Greater development of the social instinct; they play and work together better; (2) more self-reliance; (3) better power of concentration; (4) decided gain in handwork; (5) happier outlook upon school life, gained through the early direction of the instinct for play.

Miss Lucy G. Bristol, Louisville, Ky.—Children coming from kindergarten to first grade, when they have really had any consecutive kindergarten work, have many advantages over the child coming directly from home. The kindergarten child has learned to take to himself directions or instruction given to a group or class of children, where the home child will not respond, unless appealed to individually. He has learned to follow directions with reasonable accuracy; to handle himself and his working materials intelligently, where the home child is frequently helpless. He has learned considerable self-control, and has been taught to work in harmony with his companions.

The "spoiled" child and the unfortunate "only" child, who have ruled the household, here learn that they are only one of many and that others have rights that must be respected.

Most kindergarten children are willing to attempt new work with some confidence in their own ability, while the home children often have to be coaxed to make an effort. During this term, a little girl of over 6½ years wept so much and was so unhappy in the first grade that she was sent to the kindergarten, where in two weeks she had so overcome her excessive timidity that she returned to the first grade of her own accord and tried to do the required work.

All these things take a great burden from the shoulders of the primary teacher.

The criticism that the kindergarten develops only the play idea in children is less heard, as those who study the kindergartner's plans realize the connected thought work behind their play activities.

Another frequent criticism, that the freedom of the kindergarten (especially the freedom of speech) makes the first-grade discipline more difficult, will probably soon be untenable, as this year the kindergartners are teaching the little folks to work out their play problems in silence, hoping thus to strengthen their powers of concentration.

The greatest disadvantage at present, to my mind, is that children can not be required to go through kindergarten. Hence, those who do are in such minority that they practically lose the advantage gained. If in a class of first-grade beginners only 25 per cent or less (as is often the case) are kindergarten children, it is obvious that they must lose time while the 75 per cent are being brought to their standard.

Mothers and fathers need to be educated to the value of the kindergarten, as many think that if a child goes a month or two in the fall or spring each and during a few good days in the winter, he is a full-fledged kindergartner, not realizing that back of the play problems given him is a carefully developed consecutive plan, of which he fails to get the benefit.

When I hear teachers decrying the kindergarten, I feel sure they either have not investigated, or have back of them a kindergarten in name only and not founded on the principle of child growth.

Sophie C. Becker, principal of grammar school, Buffalo, N. Y.—For the first 6 years of my supervision of this school we had no kindergarten, while for the last 6 years we have had one, hence I feel that I can speak from a sufficient experience of both conditions.

Formerly we had to admit children to our first-grade whenever, in the opinion of the parent, they were old enough to come, so that the range in age was from 5 to 8 years.

In September and February the teacher's task was most arduous. She began the term with 40 or 50 wriggling, squirming, much-petted and spoilt babies fresh from the nursery. They were timid, tongue-tied, homesick babes, and she had to devise all sorts of interesting and at the same time profitable employments until they felt at home sufficiently to answer questions, so that she could ascertain what usable ideas or concepts they had which would furnish a basis for the beginning of the real work of the grade. She could not expect confidently that any of pedagogic value would be common to all, for, coming from 40 different homes, different environments, having different inheritances, and often speaking different tongues, she had 40 different culture-capacities to deal with. She found the contents of each mind different, with many faulty and strange ideas to correct, and by the time she had investigated and trained enough to transform a heterogeneous mass into a homogeneous class ready for the new ideas she had to offer, at least three months of the term had gone and a year's energy and invention had been expended. At the end of the year the older and brighter ones were ready for the second grade, but a considerable residuum was left to repeat a portion of the work.

Since we have had the kindergarten the children enter at 4 or 5 and are graded as first or second year pupils according to their degree of development. The first-grade teacher now receives 40 little workers who have learned to control their desires, their tempers, their muscles, their voices, their attention; who can take and carry out a direction; who have had all their special senses trained; who have been taught to observe, compare, think, and express their thought in fair English. They have more than one mode of expression, namely, action, painting, cutting, modeling. They know form and color; they have a sense of rhythm and some of tones, and a usable collection of concepts for the immediate work of first grade in number, nature study, literature, and ethics.

No time is lost in first grade getting ready. Work begins at once. Many children are ready for the second grade at the end of six or seven months. Only those who have lost time through illness or have a mental defect are left behind.

The first-grade teacher finds her work far more satisfactory; the parent who has had one child trained in the kindergarten would not forego the privilege for the rest of her children. We are frequently thanked for the home effect of the kindergarten training. The courtesy, helpfulness, orderliness, and general resourcefulness of the little ones are matters of comment.

WILL ANGIER, principal Lincoln School, San Diego, Cal.—In a good kindergarten there is an atmosphere of buoyancy, of growth, and of loving obedience, and there are large opportunities for training in sympathy and generosity, in social equality, and in self-control.

Some of the points where the kindergarten child excels the child who has missed that training are as follows:

(1) He has learned to take and to understand simple instructions from another person than his mother.

(2) He has learned to obey instructions frequently with much more willingness and celerity than given at home.

(3) He has learned a part of the great lesson of community life and is usually much less self-centered than the lone child of modern civilization.

(4) He is nearly always quicker and more deft with his fingers, because of the handwork.

(5) He is a better "mixer."

(6) He is, if from a family where a foreign language is the mother tongue, very much better equipped with the vocabulary in which he is to work.

ELLA RUTH BOYCE, director of kindergartens, Pittsburgh, Pa.—Two years ago statistics were gathered to show whether any time was gained in progress through the Pittsburgh schools because of kindergarten training. These were crude and imperfect, because of the lack of accurate records, but averaging together all we could secure, it was found that the average age of children with kindergarten training was 0.52 of a year lower than those who had not had it.

Children with kindergarten training fail to reap the full benefits of it for the following reasons:

The class having kindergarten training is in practically every case in Pittsburgh not kept as a unit, but is taught in a room with children without this training. While they do forge ahead even under these conditions, there is a great loss in that no account is made of their experiences.

There should be much more knowledge and insight on the part of both primary teacher and kindergartner as to the work, aims, and method of each other. Something is being done to this end in the Pittsburgh Training School for Teachers, where the junior courses for both elementary and kindergarten students are the same.

The kindergarten aim and method of discipline agree with all modern theory and effort in this matter and should be adopted throughout the elementary school.

The concrete work in form and number could with advantage be carried to a much greater degree of development in the elementary school. At present there is practically no advantage taken of the child's love for and ability to learn about form, color, and number.

Perhaps the greatest loss comes in the handwork where often children repeat the same work they did in kindergarten, and with much less creative effort.

In this connection I should like to quote the remark made this week by a principal to one of our kindergartners when the progress of a particular child was being discussed. She said: "I have always felt that there was too great a break between the kindergarten and the primary, but I used to blame it on the kindergarten. Now I am coming to believe it is the fault of the primary."

MARY A. LEWIS, Cambridge, Mass.—One gain observable in the children coming from the kindergarten to the first grade is that they have learned to come to school, and have also learned to be neat and punctual. The first day shows them as advanced in school ways as children from homes are in two or three months. They have also learned attention and the ability to follow directions, and they have gained considerable manual skill. Their incidental knowledge of number, color, form, and direction is also a great help. Their oral language is much in advance of that of the home children, and many of them can reproduce stories very well.

I place the ethical teaching of the kindergarten above all else. The children learn to live with each other and to be good comrades and loyal to their school.

I would not have any of the work of the primary grades incorporated with the kindergarten program; but I would extend some of the kindergarten work into the first grade, especially where the children enter before they are 6 years of age. We have been experimenting this spring with an overflow class of 20 children who spend most of their three-hour daily session on a veranda belonging to a kind neighbor. They give 90 minutes to acquiring the school arts, 30 minutes to games in the garden, and 60 minutes to the usual kindergarten work. The results are gratifying. The children's health is much improved, and they are very happy. We hope to continue this work, with modifications, in the fall.

. Could the youngest children in the first grade return for games, dances, and dramatizing under the conditions and in the larger freedom possible in the kindergarten rooms, much fatigue and nervousness now observable in the later part of the afternoon would disappear. Where the children attend two sessions each day this arrangement is possible and desirable.

Ellen M. Quigley, Troy, N. Y.—In my experience I have found that little children who have had the great privilege of being trained in kindergarten by a skillful, enthusiastic kindergartner have many advantages over those who come from even the best homes directly to first grade.

First-grade teachers experience very little difficulty in settling down the little people from a good kindergarten to do the work required in this grade. The children seem to adapt themselves to the different conditions in the primary almost from the first day.

I would suggest that a child who enters kindergarten at the age of 4 years be given kindergarten instruction. When 5 years old, if too immature or not fitted to take up primary work, he might have kindergarten instruction in the morning and primary work in the afternoon. A child who does not enter until 5 should have kindergarten training in the morning and primary work in the afternoon. Every child 6 years old should be entered as a regular first-grade pupil. I consider it a great injustice to any child to be kept in kindergarten until he is 7.

Alice J. Kilpatrick, Philadelphia, Pa.—The following statistics are for the year beginning September 8, 1912:

	Kindergarten.		Other sources.	
	Received.	Promoted.	Received.	Promoted.
		Per cent.		*Per cent.*
Room 5	9	100	30	83
Room 2	11	100	28	82
Room 4	7	100	36	77

This shows a decided advantage on the part of kindergarten pupils. In my opinion a child is robbed of a part of its birthright when deprived of at least one year in kindergarten.

Caroline D. Aborn, director of kindergartens, Boston, Mass.—The kindergarten has been a part of the public-school system of the city of Boston since 1888. There are at present 124 kindergartens, which means from 1 to 5 kindergartens in connection with every school district, except two. The superintendent, Mr. Franklin B. Dyer, is an avowed advocate of the kindergarten as the first step in education; therefore, under his régime we shall expect to see even more kindergartens established in the city from time to time.

I am in possession of over 100 letters written by the primary teachers in Boston, in which they have themselves stated their opinion of the benefit of kindergarten instruction.

They state that the manual work of the kindergarten is very helpful in developing skill with the hands, ability to write and draw, and the use of other implements of the schoolroom. Through the songs and stories and excursions taken by the kindergarten children, a child gains an amount of general knowledge and becomes interested in the world of nature, all of which helps him, when he begins to read, to interpret the printed page. Through the work with blocks, sticks, rings, etc., the child's number sense is awakened and developed, and this helps very much when he begins to work with abstract numbers. Beginnings of a love for literature are also started in the kindergarten, for the children hear stories, look at pictures, and reproduce stories in such a way as to make them eager for good poetry and good prose. We primary teachers feel, in other words, that the kindergarten prepares good soil in which the grade teachers may begin to work.

WATLER C. BISHOP, principal Bache School, Philadelphia, Pa.—The statement that kindergarten children are incessant talkers is well founded. All the games of the kindergarten and much of the handwork admit of conversation that not only pleases but trains the child in the use of language. I do not see how this can be corrected without destroying one of the benefits of such training. The judgment of children of this age is very rudimentary, and they can not readily distinguish when talking is permissible and when it is not. I believe it is the duty of the first-grade teacher to train the child's judgment along this line. However, in a school that admits of two kindergartens the younger children should be in one class and the older in a second. The younger children should attempt little except songs and games and, as far as feasible, these should be carried on out of doors. More serious work could then be undertaken in the advance class and these children could be disciplined toward the end of the kindergarten course along lines required for the work in the first grade.

ZOE C. SHAW, Kalamazoo, Mich.—There exists in Kalamazoo a very close relationship between kindergarten and primary. The former has been established as a regular part of the public-school system for many years, and is one of the best organized departments of our system.

Few children enter primary who have not had kindergarten training, so thoroughly convinced are the school patrons of the worth of such training.

One of the strongest features of the kindergarten and primary here is the spirit of cooperation and mutual helpfulness which exists among the teachers. Primary teachers are acquainted with the plans and purposes of the kindergarten, vice versa, and work in harmony, aiming to produce a continuous course of development during the period of childhood, with no break between kindergarten and Grades I and II of regular school. This has been accomplished partly by giving the preference to primary teachers who have had kindergarten training and partly through cooperative supervision of the two departments, planning for joint meetings of their teachers, for general discussion, and for visiting each other, thus establishing good feeling and mutual helpfulness.

Circle primary rooms are an added incentive to freedom in the primary. The child coming from kindergarten feels at home in a primary room furnished with tables and chairs and with the familiar circle for social periods. Over half of our primary rooms are equipped this way, and teachers prefer these rooms.

There is much yet to be done in the way of graded activities that will help to avoid "marking time" in primary. This we think can be accomplished when primary teachers recognize the strength of initiative and power of experience possessed by the kindergarten group sent on to them. This cooperative consciousness is what we are striving to attain.

C. OPINIONS OF PRIMARY TEACHERS.

Malanie A. Schute, Cincinnati, Ohio.—During the period of 31 years that I have spent in the Avondale School in Cincinnati, I have always had a few children who had had some kindergarten training. Five years ago the kindergarten became a part of our public school system.

We are extremely fortunate in having in our school a director who is an ideal kindergartner; so my comparison can be drawn between children who have received the best kindergarten training and those less fortunate ones who missed this training altogether.

The kindergarten children show the result of systematic sense training. Their power of observation is greater. They are able to discover things for themselves and use eyes and ears. They are more free and easy in their movements, because of the games and exercises in rhythm, which have trained and developed their limbs. They use their hands better in all forms of construction work. The sense training given the kindergarten child helps him to form a clearer mental image of the idea he wishes to express; hence his work is better in all the various modes of expression, language, painting, clay modeling, etc. He is more self-reliant, helpful, unselfish, and apt to show a budding community spirit that impels him to go to the assistance of a more timid scholar. He has a better command of language, because he has had ample opportunity to express his ideas and has been encouraged to tell what he has seen or experienced. When thrown upon his own resources, during the period of busy work, he performs the tasks assigned him more intelligently. And, lastly, his life is richer because of the beautiful stories and songs he has heard in the year spent in the kindergarten.

As to "adjustment between kindergarten and lowest primary grade," it seems to me there should be a complete "dovetailing" between the kindergarten and the first grade. The games and plays should be continued in the first grade and also the free expression by means of paper cutting, painting, clay modeling, etc. The story, which has so large a place in the kindergarten, should have a large place in the lower grades, forming the basis of the lessons in reading.

The circle of the kindergarten should find a place in the first-grade also. With the introduction of movable desks the problem of sufficient room space for games and dramatization would be solved. The transition from the kindergarten to routine of the schoolroom should be so gradual that the beginning of one and ending of the other is the same. In the words of a kindergartner of wide experience:

> If the kindergarten principles upon which the kindergarten practice is based are valid, they must be valid not alone on the stage of development which the kindergarten covers, but also for the other stages as well.

Kate Farrell, St. Louis, Mo.—During the last four years my work has been with children who were receiving primary work and kindergarten training in alternate periods. This program was instituted in St. Louis by Supt. Blewett who wished to test the development of children of 6. The law regulating school age did not, until the present year, allow a child under 7 to enter school.

The adjustment between the kindergarten and the lowest primary grades would be much smoother, I believe, and the kindergarten training a much more definite and substantial value to the child in his work in the primary grades, if he were allowed to formalize his experiences in the kindergarten. By formalizing, I do not mean anything which would in any sense verge on a drilled recitation.

Without oral expression, how can we be certain that the child's mental experiences are those which Froebel and his followers suppose them to be? While the kindergarten in theory recognizes the value of oral expression, in practice much of it is imitative and dependent. Much of the symbolism is too remote from the child's actual experience to rouse in him the impulse for independent investigation. Even in nature study and mathematics a definite result is prevented by the prevailing fear of formalism. The child's impulses remain undiscovered through failure to utilize the most potent means of expression—language. Self-activity, the proclaimed basis of the kindergarten, is not promoted in the kindergarten when it fails to recognize that to formulate thought is to produce thought.

I believe that the child who is allowed, in the kindergarten, to give voice to his own ideas, is much better equipped for the work in the primary grades than is the child who has the experiences of the kindergarten interpreted by the teacher, perfect though the language may be.

While I am in entire sympathy with the kindergarten and fully appreciate what it does for the child of from 3 to 5 years, I believe that it should, during the period from 5 to 6, curtail the time given to the less valuable forms of expression in favor of the great one of oral expression.

KATHERINE M. GUEST, Chicago, Ill.—The kindergarten child has a broadened experience. He learns habits of observation by relating what he sees on the way to and from school, in visits to parks, country, walks, etc., and nature work done in the room. Through these talks and experiences he comes to have a larger sympathy or relationship with all life around him.

Through the trades and occupations he learns industrial life and, in a general sense, the history of the race; he is taught respect for labor and a love for work of all kinds. Through music and rhythm work he gains poise, bodily control, pure tone qualities, and a readiness for what is to follow in the more definite first-grade work.

The well-trained kindergarten child is ready for the first-grade and needs to make no adjustment in the work required of him.

DE ETTA PRICE, Fort Wayne, Ind.—The aim of the kindergarten, as I see it, is not to prepare children for the grades. Its aim is to meet certain needs in child life from the age of 3 to 6. The activities of children in the kindergarten are but little, if at all, related to those they encounter in the grades, with one exception—the manual side. The child of the kindergarten has the advantage of a fuller, happier life, but the degree with which it fits or prepares him for his primary problems may be quite accurately compared to the degree which her training in cooking, sewing, and dancing of an eighth-grade girl increases her efficiency to master algebra.

OLIVE BAKER, St. Louis, Mo.—The kindergarten needs common supervision with the primary grades. The teachers of the kindergarten, in general, assume the attitude that the kindergarten is a separate institution from the elementary school. They limit their study and interest to the one step or stage in education which they teach, and forget to consider it in relation to elementary, secondary, and higher education. There is great need for a wider perspective, which an interest in the general field of education will give. I do not say the kindergarten teacher should attempt to master the methods and literature of all grades, but surely she is working with a narrow conception of the educational field in which the child is growing when she has but incidental acquaintance with the step or steps in the development of the child's work after the kindergarten.

SARAH HOGG, Richmond, Va.—As to the adjustments that need to be made between the kindergarten and the lowest primary grades, in our school we had what we called the "connecting grade." In this class some reading and phonetic work was done preparatory to the reading course to be done in first grades. This, I think, is not done in all kindergartens, but it has proved very helpful to my class. During the past term I did more than twice the amount of reading with children who had had some work of this nature than I did the term before with children who had not had this previous help.

Let me say that this is my first year with children who have had kindergarten training. I like it, and if I could I would see that there was a good kindergarten in every public school in our country.

ALIDA L. CONOVER, Bayonne, N. J.—I find that pupils who have attended the kindergarten are more restless, less attentive, less interested in primary work, and show less application, than those who enter the grades directly; also, that they are more difficult to discipline, since they must necessarily unlearn such habits as talking and the greater freedom of action which are quite proper according to the ethics of the kindergarten, but which can not be allowed in the grade work. In some cases it is almost impossible to break these habits, especially if the pupil has attended kindergarten for more than one term.

For some years I have observed that the classes which made the most rapid progress and were more easily trained in school discipline were those in which a large percentage of the pupils had not attended the kindergarten.

I find that the pupil who has attended the kindergarten is usually somewhat more apt in all manual training work; also, in many cases, more responsive in language work.

In regard to any adjustments which might be made between the kindergarten and lowest primary grade, I would suggest that a change be made in the age at which pupils may enter the kindergarten. At present, I believe, a child may enter at the age of 4 or 4½ years and remain until the age of 6. This allows some backward or very immature pupils to remain for three or even four terms in the kindergarten.

If pupils were allowed to enter at the age of 5, remain one term, and then pass to a connecting class or to 1A it would mean less time to acquire the kindergarten habits and also would relieve the crowded conditions of these classes.

I would suggest a stricter discipline in the kindergarten.

HELEN W. TANNER, Paterson, N. J.—While the kindergarten was a wonderful advance in the education of young children, yet for many years past it has become a separate tradition and fetich. Children generally enter at too late an age for pure kindergarten work and are kept at it too long. It has been the cause of much needless waste of educational years.

In this school (Public School No. 6) children enter the kindergarten at 4 years of age. They play at reading and writing (childish scribble, etc.), which they enjoy just as much as their games, and in a surprisingly short time learn to read and write, almost unconsciously. The average age at which our children graduate has been reduced by 1½ years, largely by attending to earlier entrance and to this connection between the kindergarten and first-grade work.

NETTIE J. FREEMAN, Chicago, Ill.—In regard to the adjustments between the kindergarten and the lowest primary grade, I believe the continuance of the educative work, begun in kindergarten, is greatly hampered in primary work by the lack of suitable materials and equipment. The child feels this limitation through having experienced the joy of abundance of beautiful materials.

In kindergarten there are two teachers, each supervising an average of 25 children, while in the first primary grade one teacher takes care of an average of 45, hence the step between the freedom of kindergarten and the formal work of the first grade is too great. These conditions might be improved by either a reduction in the number of pupils or providing two teachers for each primary room.

ANNA WALDSCHMITT, Chicago Ill.—There is too great a change between six years and six years and one day. There is too great a jump. The child in primary school is confined in a seat. He is almost overcome by that fact alone. If the children could all be gathered together in front it would be all right. The teacher has one side of the room that she has to listen to; the other side is put to work. Sometimes the children can not do the work because it is too difficult, or it is too easy and the child finishes his work quickly. In the first case, the child gets discouraged. The teacher has not the time to go to the child's aid the moment he needs her assistance, as she does in the kindergarten. This child naturally loses interest and becomes lazy.

The other child is too quick about his work. In the kindergarten the teacher could help children immediately. The child who gets through with his work sits idle and soon gets bad habits. Both of these cases stay in the grade longer than they should.

Children who go from the kindergarten should not have seats, at least for five months. They should have tables and chairs, as they have in the kindergarten. No teacher can take 48 children and have tables and chairs. Why not overcome that by having a cadet?

Ethel B. Fitzhugh, Louisville, Ky.—It has been my privilege to have had experience in a school without a kindergarten, and, more recently, in a school with one, and I feel safe in saying that the difference in progress made by the respective classes is very noticeable.

The habits formed in the kindergarten, the prompt obedience to signals, the distribution and handling of materials, save a vast amount of time for the actual teaching; and the little ex-kindergartner makes a very capable assistant to the teacher in her handling of those who have not had the advantage of the same training.

To me, an ideal class would be one composed of well-trained kindergarten children who had been recommended for promotion by the kindergarten teacher. Our kindergarten teacher and myself compared notes after the promotions had been made at the end of the first term; and, with a very few exceptions, the failures were the same children who had not been considered ready to leave the kindergarten.

Antonnette D. Rick, Jamestown, N. Y.—The last few weeks or even the last term spent in the kindergarten should be given to a course of "primary tactics," in which the children should do their table work without talking except when necessary for information, just as the primary pupils do their work at their seats.

Of course, their games, free play, and marching give them a chance to relax, just as the various exercises and games relieve the tension in the first grade.

The kindergartens in which I have observed this plan carried out were the most pleasant and delightful I have ever seen; the pupils seemed in no way to be upset by the fact that they were working quietly.

When I entered primary work after my kindergarten training there was all the difference in the world in the way the pupils in the different schools took up the grade work.

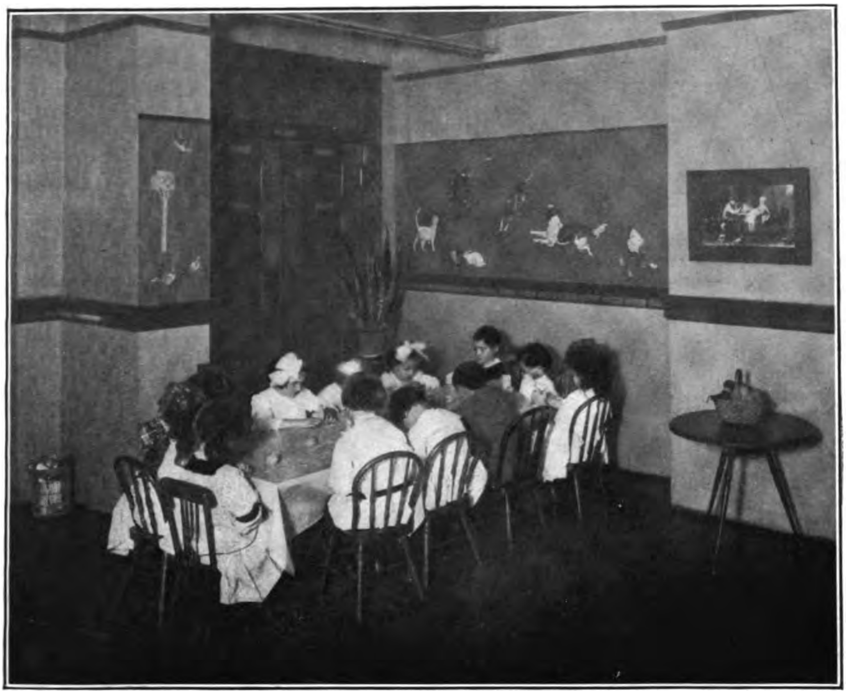
Those from the "quiet" kindergartens seemed to be ready to do "something harder" and understood that they could not do their work well if they were constantly talking and watching others, while those from other kindergartens "didn't like school" because they "had to keep still and had to work."

Nellie Walton Ford, St. Paul, Minn.—It has been my experience to find that children who come into the first-grade classes from the kindergarten possess greater self-control, are more mature, less timid, pay better attention, take commands more intelligently, do better handwork, and have a larger vocabulary. The last is especially true of foreigners.

In regard to a readjustment of classes, I have long wished that a class might be inserted between the kindergarten and first grade, in order to avoid the difficulty which comes from promoting too young. Children who are ready to learn to read and write take up the work with avidity and profit, while a large proportion are dulled and permanently injured by having subjects forced upon them before their powers are sufficiently developed.

I do not think the more brilliant children would suffer by the change, as they are often weak in handwork. They would gain in self-control and poise what was lost in the mere acquisition of facts.

I should plan to give one period a day to paper construction or clay modeling, one to pencil drawing or free-hand cutting, one to water-color work, varied by the laying of tablets, as an introduction to original design. This work might be reproduced by

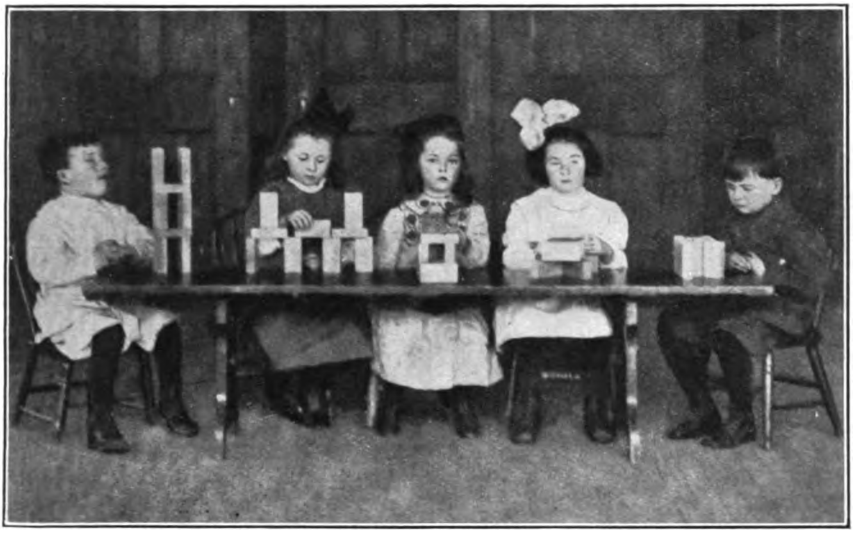


A. "WHAT FUN CLAY IS!"

Clay for modeling is a universal favorite; it leads to growth in power of expression.

B. "ONCE UPON A TIME."

Good stories are to a child what good books are to a grown-up.



A. "MINE IS FINISHED."

This set of blocks requires much skill to fit together and balance the brick-shaped pieces.

B. "WE ARE GOING TO BUILD HOUSES."

By such materials the child's instinct to take things apart and recombine them is guided into conscious skill.

tracing about the forms and coloring with crayon, but I think design in water color painted in mass is too difficult for 6-year-old children.

I would have story-telling, with reproduction by the children, orally and in many cases by dramatization. There should also be oral descriptions of toys, flowers, birds, and objects taken up in nature study, and there could be talks about the weather and change of seasons.

Singing of joyous songs should have a place, but there should be no technical study of music.

Arm movements at the blackboard should be given as a preparation for writing and proper development of the muscles. While it is quite possible for children of 3 to write, who wants them to do it?

There should be counting exercises of great variety with tracing and coloring of geometric and other forms in groups, for quick recognition, and paper cutting and pasting, for the impression of the same should form a part of the work.

I would teach short selections of beautiful poetry and tell a few stories, simply for the pleasure they give, with no effort to have them reproduced. Frequent periods for relaxation, fresh air, and physical culture, with the simplest instruction in hygiene, should be included. Daily phonic drills should also form part of the course.

I would not allow any but an enthusiastic, sincere, experienced teacher to touch this work and, when appointed, I would allow her great freedom, with no restrictions in regard to the length or arrangement of periods.

IV. ABSTRACTS OF PAPERS READ AT THE MEETING OF THE INTERNATIONAL KINDERGARTEN UNION, WASHINGTON, D. C., APRIL-MAY, 1913.

THE STANDARDIZING OF KINDERGARTEN TRAINING.

NINA C. VAN DEWALKER, Milwaukee, Wis.

The question of standardization of kindergarten training is one of great importance to the kindergarten movement. It is only as a part of the school system that the kindergarten can realize the hopes of its founder, but in the estimation of many, it has not yet justified its place there. Statistics show an encouraging increase in the number of public kindergartens during the past decade, but an increase by no means commensurate with the advance made in general education during that period. The agencies which the kindergarten employs—the song, the story, creative self-expression, and directed play—are in high favor, but the value of the kindergarten itself is still questioned. In the judgment of the school, the causes for this lie in the character of the training which kindergartners have received. By the same judgment serious efforts need to be made to raise the standard of that training, if the kindergarten hopes to retain the place it has gained there.

That standards of kindergarten training have risen immeasurably since the early days is evident. It is a matter of pride that the best training schools are now of college rank in their entrance requirements, that the course is not less than two years in length, and that many offer three and four year courses. But desirable as it is to have an increasing number of thoroughly trained kindergartners graduated each year, the standard of efficiency among kindergartners in general will not be sufficiently raised it the majority of training schools send out in the meantime large classes of those who are not up to the standard that present-day conditions demand. A raising of the general standard—in fact, a standardizing of the training course—is therefore necessary.

A standard, however, is determined by the end in view, and kindergarten training, like any other, might be judged good from one standpoint and poor from another. Much of the friction between the kindergarten and the school comes from this fact, that each has its own distinct aim and judges the other by that aim only. The estimate which the school places upon the kindergarten and her training is not, therefore, necessarily the true one. If the kindergarten is to perform its service for the children of the country, however, and exert the influence upon the school that it should exert, it can do so only in and through the school and to the extent that it recognizes itself and the school alike as parts of a system in which each must work in harmony for a common purpose. In this entering into the purpose of the school as a whole, the kindergarten need not sacrifice its own aims. On the contrary, it is only as it sees itself in this larger relation that it can realize their full significance. It can not perform its part, however, if its work is judged inferior to that of the school. The fact that it is so judged, by some at least, is cause for action on the part of training teachers. The position taken in this paper, therefore, is that the standard of kindergarten training needs raising, because in the estimation of the school the kindergarten does not yet perform its own service adequately, and does not, therefore, lend the aid it should in furthering the purpose of the school as a whole.

There are reasons why the attitude of the school toward the kindergarten is especially critical at the present time. It is evident that there has been a great awakening of educational interest in the last half-dozen years. This is due in part to the scientific investigation of schools and school problems which has been in progress during that period. This investigation has made unexpected revelations in many directions. It has shown the elementary school to be particularly weak, as scores of children are retarded each year in passing from grade to grade. Fifty per cent drop out before the sixth grade is reached; and those who remain to finish are "misfits," as they are not prepared to enter any phase of practical life. The realization that the school was not producing socially efficient individuals, and was, therefore, itself lacking in social efficiency was the first step toward a new order of things, an order in which efficiency is the watch word. It is to secure greater efficiency that the school concerns itself with the children's health; it is because the influences of the street do not make for efficiency that playgrounds and social centers are established; and it is to cultivate the efficiency needed in practical life that trade schools and continuation schools are being adopted.

Because the school seeks to develop efficiency, new demands are being made upon the teacher. Each subject, in fact every exercise, is expected to contribute to this end. In the effort to get more efficient teaching, it has become evident that subjects must be taught in a close enough relation to life to grip the children's interest. Because of their appeal to children's interest, music, drawing, and the arts of expression in general have assumed a new value. The attempt to educate for efficiency has, therefore, brought about many improvements in school work and methods. It has shown the value of creative self-expression—the basic principle of the kindergarten—as a means of developing efficiency. It is because of this new spirit that the kindergarten is asked to justify its place in the school system as it never has before, and that the kindergartner is called to account on new lines. Whenever she can show evidence of real growth on the part of the children, her work receives an appreciation never before accorded it. If she lacks the insight into the child's development and the principles upon which present-day education is based, however, as she too often does, she will be unable to direct the children's work in kindergarten, so that development along the line of grade work will result from it. Her work may have value, but her unfamiliarity with the ideals of the school makes it difficult for her to translate her kindergarten ideals over into the ideals of the school and make them bear upon its work. It is because the superintendent does not see the results he hoped for that he hesitates to urge the adoption of the kindergarten when he is considering the agencies that will increase the school's efficiency. Whatever the justice of the criticism which he passes upon the kindergartner and her work, she can not afford to let the kindergarten fall below any standard which the school may set. If the kindergartner's acquaintance with the aims and methods of general education is inadequate, as the superintendent alleges; if she lacks the needed preparation in drawing, music, story-telling, and other school arts; and if she is not as open to suggestion and criticism as she should be, should not the training teachers of the country see that these shortcomings are remedied? The formulation of an ideal course of kindergarten training is doubtless necessary, but it is less imperative than the improvement of courses as they are to meet the conditions that require them to be different.

The work of a kindergarten training school must fall into several well-marked lines. To meet the demands of present-day education, these should be as follows:

1. A study of the child's development, accompanied or followed by a course in physiology and psychology.

2. A study of the ideals and methods by which the kindergarten seeks to further that development, by means of the literature of the kindergarten and the instrumentalities which it employs.

3. A study of the subjects with which the kindergartner must be familiar to do good work in kindergarten and to prepare the children for the grades, such as music, art, literature, and nature study.

4. Practice teaching to show the future kindergartner's grasp of the kindergarten principles and her power of applying them.

5. A study of the kindergarten in its larger relations (*a*) to the work of the grades and (*b*) to the mothers of the children and the community of which it is a part.

6. A study of subjects needed for the students' own development, such as composition, expression, public speaking, and domestic science.

That these several lines of work must be included in the courses of all training schools that are ranked as standard is evident. That they can not be successfully undertaken without a high-school education as a foundation, nor successfully mastered in less than two years, is equally evident. In these two respects, most training schools have already become standardized. A two years' course with a high-school entrance requirement is not necessarily a strong course, however, as the organization of the course may be such as to make strong work impossible. The obstacle to the organization needed to insure strength is the disproportionate amount of time frequently given to practice teaching. If two years are given to this, the course can not be strong, since the time needed for the instructional work is too short to make it so. If one year of practice is made the standard, there is time for the instruction in child study and psychology that the kindergartner needs to make her work intelligent and vital; there is time for a study of the kindergarten instrumentalities and their purpose in the child's development; and there is time for the instruction in art and music, and perhaps also in literature and nature study, that the student needs in order to do successful practice teaching and the kind of work after graduation that the school wishes done. Unless the time given to these subjects in the kindergarten training school is materially increased, the kindergartner will continue to be at a disadvantage as compared with the grade teacher who has received her training in a good normal school. The instruction given in psychology, music, drawing, literature, and nature study covers at least a semester of daily recitations. In view of the limited instruction given in many kindergarten training schools, it is not surprising that the kindergartner's work in these respects should have merited criticism. In these it is not a matter of interpretation, but of fact, that the kindergartner's preparation is inadequate to the demands of the school, and kindergarten training needs to be standardized up to the level of the good normal school.

With a high-school entrance requirement, a two-year course, a year of practice teaching, and at least a semester's instruction in music, art, psychology, literature, and nature study, the kindergarten course would possess elements of strength that it now too often lacks. The most important phases of its work remain to be considered, however. These are the courses in kindergarten instruction proper, and those that relate the work of the kindergarten to that of the school as a whole. Do these need strengthening and standardizing? To the fact that the second needs it, every school principal will bear testimony. But surely the kindergarten instruction itself can not need it. In some respects this needs it most of all, since it often violates the very principles which the kindergarten advocates. The purpose of the kindergarten is to develop creative self-activity on the part of the children. To do this, it directs the children's self-expression in such a way that they ultimately discover for themselves that there are principles by which that expression must be guided. To impose these principles upon them by an outside authority would be a violation of Froebel's dictum that education must not be arbitrary, categorical, and interfering. The development of creative self-activity on the part of the children in the kindergarten has been fairly successful. Has the path that leads to creativeness in the children been followed in the kindergarten instruction of students in the kindergarten course? Are students led to a study of the kindergarten instrumentalities through their own observation of children's natural play material? No, they are given these as objects to be accepted upon Froebel's authority. Do they reach the conclusions that Froebel reached as to the methods of the kindergarten by any study of children's natural procedure in play? No; they are taught these upon an authority that has no relation to their own experience. But are these methods, which are all too common in the kindergarten instruction to students in training, the methods which Froebel used and approved of? Not so do I read the story of his work. The time allowed for this paper is too brief to permit more than the briefest sketch of a course that seems to me to accord with Froebel's own method—a course which is based upon the developing life of the child and which traces his varied activities in their natural evolution. From such a course the kindergarten instrumentalities would appear to the student as the natural outgrowth of the children's play needs, but far better than any they could themselves have devised; and the principles and methods of the kindergarten, those underlying children's normal play, but far in advance of any that even the individual kindergartner would be able to formulate. In such a course, the means to the child's development—the games, gifts, and occupations—would be seen in their natural relation to the educational ends sought, and the different phases of the kindergarten instruction would fall into their true places in relation to the others. Such a course should be followed by a study of Froebel's own works, for the purpose of leading students to his general world view—that which determines his ultimate ends and gives his doctrines their high educational and spiritual significance. Students so taught would recognize the value of authority, but would not be obliged to lean upon it as their only support, as those taught by the method of authority are obliged to do. They would get a clearer view of Froebel's message, since they would see it written in the nature of the developing child and not merely in the books that bear his name. They would, therefore, illustrate the truth and value of Froebel's doctrine of creativeness in themselves, and would have the poise and power to adapt themselves to new conditions that they now too frequently lack. In consequence, there would be little or no occasion for the criticisms now too often made.

If the kindergartner-to-be has been trained in the way suggested, the instruction that she needs to gain an insight into the work and methods of the grades will not be difficult. This should be standardized as to amount and quality, however, and given by some one in grade work or its supervision, so that students may become familiar with the attitude of grade teachers and the school in general. The instruction should include a course in general pedagogy, from which students will gain a knowledge of the aims of the school, its curriculum, the instructional processes—teaching, testing, and training, and the principles that underlie these. It should include also a course in methods of teaching the different subjects, and would necessarily occupy a semester of time. Some work in the history of education is also needed to give students a conception of the educational movement of which the kindergarten and present-day school work are the outcome.

There is still another respect in which the work of the kindergarten training school needs standardizing, and that is the method of estimating the amount of work done. A college course estimates this in terms of units, a unit being an amount of work that covers a given amount of time and a specified number of recitations per week. A student's rank in any subject or in the course as a whole can always be easily determined by adding these units. Is there any way by which the amount and character of the work done in the kindergarten training school can be thus estimated? Those who have tried to adjust the work of a student from one institution to that of another know that there are no common standards. A year's work in a subject means one exercise a week in one school and two, three, four, or five in another. Personal questioning as to the number of weeks covered by a subject and the number of recitations per week is the only means of determining its value. In these respects, as in many others, the kindergarten training school has still much to learn from the college or the normal school. As yet its work has little standing among educators. The adoption of the college system of credits would be another step toward the standardization it needs to make it respected. If current discussion results in bringing some degree of order and uniformity out of the chaos of kindergarten training courses, it will have performed an important service for the kindergarten cause.

The suggestions given in this paper have grown out of present-day emergencies in the kindergarten situation, and are therefore practical rather than theoretical in their basis. They represent the "liberal" viewpoint in the main, although all those who class themselves as such might not agree to the details of organization and administration suggested. If the criticisms upon existing conditions seem severe, it should be remembered that they are but reflections of the criticisms made by those outside the kindergarten ranks. They grow out of a sincere desire to aid in bringing about the conditions that will enable the kindergarten to perform its high mission to American education.

THE KINDERGARTEN AND GENERAL EDUCATIONAL PRINCIPLES.

BERTHA BARWIS, Trenton, N. J.

Would not kindergartens be more efficient if, in the methods of procedure, teachers had more definitely in mind certain desired results which would agree with general educational principles, and if the teachers kept in mind the grade work which follows kindergarten?

Kindergartners have had four distinct methods in mind in using kindergarten material: Dictation, imitation, suggestion, free play. In using these materials (excepting free play) the desired results have been a finished product. Would not our work be more efficient if we used materials according to two methods, experimentation and problems? These are methods which have been used since the beginning of the race. Having in mind these desired aims, there results a development of initiative, judgment, power to do, stimulation of thought. If these desired results are kept in mind in using materials, the point of departure will come from the child. After the child has made his attempt, then let him see where he has failed by reference to the object he has tried to represent. We can be satisfied with a crude product so long as it satisfies the child. As for technique, this will come in time. When the desire for a better product comes, it will call for greater skill and will furnish the very best possible motive for necessary drill.

Are we as careful as we should be in keeping in mind the social aim of education, using the principle of cooperation which makes for independence, a factor so necessary in life outside of school?

Could we not make more use of our group material, thus preparing for grade work, having one group of children working entirely alone?

WHAT THE KINDERGARTEN CAN LEARN FROM MONTESSORI.

WILLIAM H. KILPATRICK, Teachers College, Columbia University.

In this discussion the Montessori system is taken to mean whatever is found in the translated book or in the approved practice in Rome.

Madam Montessori allies herself most commendably with the scientific aim and attitude as the only rule of educational faith and practice. Her practice is not so praiseworthy. In the opinion of some competent to judge, her biology is generally bad, while her psychology is not abreast of the best. Montessori has then the spirit but not the content of modern science.

For many years the proper curriculum for the young child has been much discussed. Froebel expected some geometry and arithmetic, but little or no reading or writing. The kindergarten has, as a rule, taught no reading and writing, and but little of number or geometry. Montessori, however, expects her work to culminate in the three R's, and her apparent success has been widely discussed. In arithmetic, it may be dogmatically stated, there is no contribution for America. Her reading method depends on the phonetic Italian language, and when separated therefrom has no new suggestion for us. The writing is beautiful, and may contain suggestions of value to us, though the matter is not certain.

It is quite another question whether the kindergarten should wish to take up the three R's. There is at present no scientific basis for a final answer, but the wisdom of such a move is at least questionable. There is danger of deadening this tender age. A school without books is Froebel's everlasting glory.

The doctrine of liberty is the most interesting of the Montessori doctrines. Froebel professed it, but in practice we have too often had dictation instead. The kindergartner has a detailed program; and the children have been directed therein by suggestion, seldom by force. The freedom has been narrow, limited to the exigencies of the teacher-made program. Montessori, on the other hand, has no such detailed program. During the long period set aside for the use of the apparatus, the child chooses, practically ad libitum, how he will spend the time. The director keeps herself distinctly in the background. Yet there is no anarchy; on the contrary, a vigorous activity along the proper lines.

Three elements here enter, the choice of the child, social cooperation, and conformity to group requirements. Froebel and Montessori evidently stress these differently. Montessori emphasizes freedom—the child did not even march unless he cared to do so.

In the kindergarten there is a great deal more of group activity, and consequently more of a certain kind of social cooperation; but the moving will is usually the teacher's, so that the cooperation often lacks its best element. Practically the same thing is to be said of the conformity. It appears, then, that the best policy would be to use the Froebelian emphasis upon group activity, but secure it through a much freer and more spontaneous cooperation of the children as they busy themselves in activities that spring more truly from themselves.

Closely allied with the foregoing is the question of the adequacy of self-expression provided by the Montessori system. In fact freedom is meaningless apart from the opportunity for self-expression. While Montessori allows freer individual choice than Froebel, the range of choice is much more limited. Play as such is little encouraged. In particular there must be no playing with the didactic material. Games are not much in evidence, and those found are inferior to those of the American kindergarten. Stories have no place—a lamentable defect. There is little utilization of the imagination. Drawing and modeling play but small part. The freedom of the Montessori school, to prove most useful, must be united with the variety of the kindergarten.

As a guide to the freedom allowed, Madam Montessori seeks to utilize the principle of auto education, a scheme whereby the school exercises set their own problems and correct all errors. The aid is admirable, but as here presented the practice is limited in both scope and value. So mechanical an auto education can have value only on some theory of formal discipline.

Perhaps even more than the liberty of the Montessori system has its scheme of sense training found praise. An adequate discussion of this topic is not easy. There are at least three positions as to sense training. The first says that the sense organ as such can be improved so that one sees with a better eye, for example, much as one might look through an improved telescope. To this theory two other groups say no. These agree that the eye sees more things because fuller meanings have been attached to distinctions all the while optically visible.

Which theory is correct? Has Cooper's Indian a better eye than the scholar? Or is it that the former has learned to note significance in the things of the forest that lie out of the latter's experience? To test whether it be eye or attached meaning, bring the Indian into the scholar's library. Show him these two pages, one of French, one of Latin. What says the Indian? "They are both alike." A glance tells the bookman that he sees different languages. They see and note different significances.

So far theories two and three agree, and they are right as opposed to the first. But now they differ. Number two says that the eye trained to discriminate in one line will discriminate wherever seeing is needed. The child trained to observe birds will for that reason observe the better trees and styles of houses. In other words, number two believes that the child has general powers or faculties of discrimination, of observation, of memory, etc., and that any training in any of these fields trains the faculty so that it may be used anywhere else. To this position number three says no. There are no such general powers of faculties; training is specific, not general. And modern psychology decides in favor of number three.

Consider now the application of these three theories. If one believed in either of the first two, he would be more concerned in the exercise of the organ or faculty than in the value of the content thereby gained. He would consider that some sort of gymnastic exercise was the proper form of training the senses. Never mind about what was learned. The third theory, however, would ask, Is this child making distinctions that are going to prove useful? Is this child getting desirable sense qualities?

Where now stands Madam Montessori? "It is exactly in the repetition of the exercises that the education of the senses consists; their aim is not that the child shall know colors, forms, and the different qualities of objects, but that he refine his senses."—Montessori Method, page 560..

The slightest examination of the didactic apparatus, and the most casual reading of the exposition of its use, shows that Madam Montessori meant to base the usefulness of the apparatus predominantly upon an erroneous theory of sense training, whether of the first or second is not always clear. We accordingly reject the didactic material, and consider its professed sense training largely delusive.

In résumé and conclusion: The real individual freedom in the Montessori schools we recognize as their best achievement. If we can so utilize the extraordinary publicity given to the working of these schools to loosen the joints of our school practice from the kindergarten upward, we shall willingly acknowledge the service.

THE RELATION OF DIRECTOR AND ASSISTANT IN THE KINDERGARTEN.

JOANNA A. HANNAN, Milwaukee, Wis.

Assuming that the director and assistant have received the same training, the difference between them is generally one of experience rather than of preparation. The director, because of this broader experience, is usually better qualified to take the lead in all those matters which call for mature judgment, such as problems of administration and of direction of the work. But her attitude toward the assistant should be one of helpfulness rather than of authority, one which will bring into play the best efforts of the assistant. No authority should be exercised which may in any way interfere with her initiative. This consideration of the development of the assistant's initiative should be uppermost in the mind of the director when she is planning her program; hence, there should be mutual understanding between director and assistant as to the aim and scope of the work.

This understanding can be effectively brought about if the director and the assistant plan the work together. Each should offer suggestions, each should defer to the other, and together they should consider the value of these suggestions and their usefulness in accomplishing the ends for which the work is being planned. Together, too, they should decide the share of the work which should fall to each, so that each may do her part cheerfully and effectively.

Indeed, the effective administration of the kindergarten depends largely upon the skillful distribution and equitable division of the work. There should be no shifting of responsibility. Both director and assistant are responsible for the character of the work, and each should be assigned those duties which her talents best fit her to perform. In general, the director must take the lead, but this does not mean that the assistant should never be given the management of the kindergarten. Unless she learns early and through frequent experience to assume complete control, she can never be anything more than a tool in the hands of the director.

It should be the aim of the director, in distributing the work, not only to develop a competent assistant, but also to train her for the work of director. Nearly all assistants eventually become directors, and if their training has not been such as to fit them for this added responsibility, the director has failed signally in her duty toward the assistant. Once a week, at least, and more frequently, if possible, the assistant should take complete charge of both the administrative and executive work of the kindergarten. From time to time the assistant should take the lead in planning the work, and the director should assist rather than guide, despite her riper experience. The director will thus keep in touch with the work of the assistant, and the assistant will receive invaluable training for future responsibilities. Each will learn to sympathize with the problems and difficulties of the other, and each will be ready to loyally support the other when problems arise which demand the hearty cooperation of both.

Loyalty, indeed, is the primary virtue of an assistant, loyalty in her aims, loyalty in her effort, and loyalty in her execution of the work. There need be no subservience, indeed there should be none, since it is only by adhering strictly to her own convictions that the assistant can bring to her task the individual color without which no work can be effective. But this need not prevent her from responding loyally to the suggestions of the director, nor from acquiescing cheerfully when there is a conflict of opinion. This acquiescence, however, should never be of such a nature as to lessen her individuality. Rather, let it be clearly understood that the surrender of opinion has been made in the interests of harmony, not as the result of conviction.

THE RESPONSIBILITY OF THE ASSISTANT.

Miss Marie Pearce, Washington, D. C.

I. How much responsibility should be given the assistant?

1. She should make her own program, consulting the director. Results should be talked over with the director, to give her a grasp on the whole situation.

2. She should look over the attendance of her own class and call on absentees, in order to obtain better knowledge of children through contact with homes.

3. The order of the room should be given to the assistant to balance the clerical duties of the director: Dusting, flowers, blackboard pictures. The director should be responsible for pictures, arrangement, etc., with the help of the assistant.

4. She should share in mothers' meetings: Plans, preparation; and should attend mothers' meetings.

5. She should take charge of circle, games, and stories at times.

6. She should have a duplicate roll book for practice.

II. Should the assistant be responsible for the success of her work to the director or to the school principal? She is responsible in a measure to both.

1. Relation to supervisor. (*a*) Supervisor has whole department and must be responsible for assistant. (*b*) Has ranking and marking for promotion. (*c*) Conferences for their special work. (*d*) Supervisor may give help through the director, criticism.

2. Relation to principal. (*a*) Class affects whole school. (*b*) Principal may help through giving advice, closer contact in talking over plans, programs.

THE GIFTS.

CAROLINE D. ABORN, Boston, Mass.

1. *Why* use the Froebelian gifts?
2. *How* use them?

1. Why? The child of 4 or 5 years has the impulse not only to be active, but to be active for the increasing development of his own life. The gifts provide him with material upon which to be active in ways that must, if properly used, tend to such development. A child will, of course, make use of any object to satisfy the impelling force of his own nature to experiment, to discover, to change, to make. The kindergarten gifts, because of their simplicity, are the best known media for these purposes.

The child has many experiences in this great chaotic world of sense impressions, which need to be organized and interpreted. The gifts offer first of all, material with which the child can *do* something. They also offer opportunity for the selection of such deeds as will help to a correct interpretation of experiences. Among other things which the gifts organize and interpret, are experiences of color, of form, of size, of number.

The gifts, especially the building gifts, are a kind of clearing house, offering as they do a means of clearing the child's perceptions and ideas, and giving occasion for their extension.

We who use the gifts do so, not because we are immersed in the sea of tradition, nor because we superstitiously regard them as having in themselves a magical value, but because experience has shown them to be the best instrumentalities yet discovered for developing the powers of hand, head, and heart in the little child.

II. How use the gifts? Froebel's plan of organizing the child's experience is to make use of typical acts, typical facts, typical characters, and typical processes. All the activities of the kindergarten—the song, story, talks, excursions, gardening, and care of animals—furnish the various means of carrying out this plan; the gifts, too, are significant of this aim. They furnish types or concrete embodiments of universal standards for the child to play with, not to learn about in an abstract way, but to handle and play with. The child who opened his sixth gift box for the first time the other day and fairly shouted in his eagerness: "Oh, look! Every old kind of brick here," gives one illustration among many of the way in which the child's mind is stimulated to see form. A letter received by a kindergartner contained these enigmatical words: "If yer want the stove covers yer must come and git them yerself." This being translated meant that Johnnie's eyes had been opened to see round objects through the type form used in the kindergarten and, having been asked by his teacher to bring something "round," he had asked for the stove covers, they, perhaps, being the only "round" thing in his immediate environment.

Not only do the gifts furnish types or standards which serve as valid bases for classification through analogy, but since every object is the product of an energy, we should, through the use of the gifts, awaken an interest in the child's mind in various energetic processes by getting him to go through the steps of some such processes.

Every gift exercise should begin with self-expression—the doing, the making of something which the sight of the material makes the child want to do, and which is suggested to him as he investigates and experiments with the material. I met a young man not long ago, who, as a boy, was in my kindergarten. He said: "Do you still use blocks in the kindergarten?" "Oh, yes," I answered. "I remember them well," he said, "and that they always spelled trains and engines to me. The other children, I recall, played all sorts of things with them, but I never saw anything but trains." (I remembered this fact, too.) Then he continued: "I am in a bank now, but I still dream of a life in connection with trains somehow, and I hope I shall realize it sometime." Francis is another child who, having once made a sleigh with his third gift cubes, upon which he piled his fourth gift bricks for Santa Claus's presents, is content to repeat this over and over with every other material. The question is, Shall he be left free to stay on that plane, or shall we suggest ideas and the possible expression of these ideas? We can not afford to lose sight of the double purpose of the gifts, i. e.:

1. To furnish opportunity for self-expression.
2. To furnish opportunity to extend the child's world.

THE GIFTS.

LUELLA A. PALMER.

The "gifts," as Froebel formulated the series, may be considered in three ways:

1. As materials forming a complete logical unity within themselves.
2. As materials which the teacher uses to guide the children.
3. As materials which the child uses to organize his powers.

1. That there is such a logical relation between the gifts is interesting, but that it is necessary to have materials for a 5-year-old child which will show this relation is another question. The completeness of the circle which they form is entirely beyond the vaguest comprehension of a little child. The materials which should be chosen for his education are those which will present the amount and degree of logical order which he is capable of comprehending.

2. The kindergartner can use her material in two ways, by emphasizing (*a*) material or (*b*) the child.

(*a*) If she endeavors to bring to the children an idea of the connectedness of the material, she must plan a series of steps in which the children are to walk. These can be taken either by following direct dictation or by such careful limitation of the child's possible advances that only the right step can be taken.

(*b*) If the kindergartner views the gifts as means by which to develop the child's powers, the consciousness of their logical order will be present in her mind only as a goal which she hopes the children may reach some day. She will view each separate material in the light of its worth for organizing the child's present experiences and activities. This may lead her to discard some gifts and emphasize others. Such as she retains will be used for a purpose exactly in line with the child's purpose, except that she will realize which paths will lead most surely toward the later logical interpretation of the universe, and the child will only unconsciously strive toward the same result.

3. The child's experiences and activities can only be organized through a sequence which is sociological and psychological. This seems a vague statement. It means that what is provided in a child's environment and what he is encouraged to do will arrange his ideas in the best way when such things appeal to his gradually expanding nature and lead him toward acceptance of social standards. If the gifts are materials which help a child to organize his powers, they must give him such experiences and call forth such activities that his mind will be developed and in the direction that humanity has found of most worth.

The earliest gift lessons somehow left the child out of the planning except as a kind of mechanism; by supplying the power which moved the gifts in a certain way he was supposed to connect them with a cog which moved his mental machinery in the same direction. The results were to be forms of life, knowledge, and beauty as judged by the adult—that is, the results were in the material—and it was hoped that corresponding results were within the children's ideas. The methods were to be dictation first and foremost, then imitation, etc., methods were something contributed entirely by the teacher. In most kindergartens of to-day the forms made with the gifts may appear much the same as those of 50 years ago, but each one is considered in the light of the development which it has given to a certain aspect of the child's nature. A "form of beauty'' is not such for educational purposes unless it is evolved from a child's own feeling and is the most beautiful which he can make.

Left to himself, a child might evolve relations between materials which would be trivial. It is the teacher's duty to help him arrange his experiences in ways which will be most useful. This order is best developed by providing some stimulus which will inspire a child to outline some end and then find suggestions which are most appropriate to achieve this end. The mind thus forms a habit of calling up suggestions, relevant because of some classification which is vital and then choosing those which are most significant for the occasion; this is reflective thinking or reasoning.

There are three general purposes in the use of material: (1) To discover its possibilities; (2) to apply this knowledge, get a rich variety of experiences in connection with it; and (3) to choose some end which will bring order and consecutiveness into these suggestions.

With these general purposes in mind, the specific purposes of different gift lessons might be as follows:

(1) To investigate, to discover properties of the material, its characteristics and possible uses.

(2) To formulate some purpose, possibly suggested by the sight of the material, and to control material to carry it out.

(3) To observe and follow another's use of material.

(4) To formulate a purpose in line with some past experience which has been vivid, and to control material to express it.

(5) To follow another's use of material because it is well adapted to express some idea about past experience.

(6) To discriminate between the values of the material in order to choose the kind best suited to express an idea.

(7) To exercise memory by repeating some form which has been made at a previous time.

(8) To express the beauty or scientific facts which he has discovered can be shown through the material.

(9) To show control of the technical naming of the material by following a dictation.

(10) To cooperate with others in the use of material, by adding to some large form, or by building a smaller form which is needed to express an idea which has been decided upon by the group.

I can merely state dogmatically that I believe that the Froebelian building blocks are the best materials that will be found to help in a child's growth; that sticks, seeds, and colored balls are materials which a child enjoys and which can be used educationally. There are many doubts as to the value of the rest of the gifts.

PRINCIPLES IN THE SELECTION OF STORIES FOR THE KINDERGARTEN.

ANNIE E. MOORE.

We have available very few records regarding the particular stories which seem suited to children of different ages. Tradition and child study both assert with emphasis that children of a certain age love fairy stories, but we are helped only slightly by this well-established fact. The questions of quantity and quality have still to be decided. Just which fairy stories and which versions of them shall we use? Choice has largely depended either on tradition or on the individual likes and dislikes of the mother or teacher. There is a certain common stock of stories which American children are in possession of, and an examination of the titles of this list would show that they are among the best of the popular folk tales. These are the old stories which satisfied the imagination and fed the spirit of the human race in its infancy and which are suited to the young of all races and all times.

A long process of natural selection has been going on by which the coarse and brutal have largely been eliminated and those embodying universal truth and appealing to modern standards have survived. In the repeated telling and retelling these old tales have also been polished in form so that from the standpoint of perfection of finish they are well-nigh impossible to imitate.

"Cinderella," "Sleeping-Beauty," "One-eye," "Two-eyes," "Three-eyes," "Snow-white and Rose-red" fulfill perfectly all the requirements of the good short story.

One principle, such as the ethical value, must not be allowed to assert itself over all the others, such as pure enjoyment, cultivation of taste, refinement of diction, training of imagination, and developing power in thinking.

The exclusive use of stories having a clear moral lesson is sure to result in a very narrow selection and the elimination of much that is of positive value, or the very questionable practice of making over and doctoring in accordance with a certain prescription until all the original beauty and virility of the story are lost. There is evidence that many kindergartners are dominated almost exclusively by the purpose of making the story the vehicle of a moral lesson. For what other reason would one think of selecting out of the great body of folk tales such stories as "Faithful John," or "East O' the Sun and West O' the Moon"? They are long and complex, contain many objectionable features, and are anything but childlike in their main current of thought. It would be easy to mention 20 folk tales far superior in every way for children except for the lesson which these are thought to convey.

It is possible to be too exacting regarding literary beauty and finish. An over-refinement here may cause one to reject altogether certain types of stories which, while not measuring up to the standard of the classic, still appeal to children and serve to suggest desirable lines of thought and action. Many realistic stories and bits of history and biography come in this class, since we can rarely find such material in very finished or perfect form. Here the art ideal must be partially set aside in favor of something which is for the time of paramount importance.

The seasonal influence often tends to narrow and circumscribe the choice of stories in the kindergarten and to set a false valuation upon many that we use. Take a complete collection of Hans Andersen's fairy stories and search for those best suited to little children. Would any one think of selecting "The Little Match Girl" for kindergarten or first grade were it not for the fact that it is a Christmas story? Is not the version of "Thumbelina" commonly used in kindergarten, which consists of mere shreds and patches of the original, employed primarily to deepen a certain phase of thought or feeling which happens to be prominent without much regard for the peculiar values belonging to Andersen's stories? I am inclined to think that "Persephone" from among the myths is chosen chiefly for its seasonal significance, since its theme is not particularly well fitted to little children. The use of poor homemade stories is accounted for in the same way.

Information is not a legitimate element in story any more than in poetry. Nature fairy stories are as much a "fraud on the fairies" as the abuse to which Dickens referred, that of turning the old tales into temperance tracts. Nature's phenomena and processes are quite as marvelous as any fairy tale and will, if properly presented, prove quite as interesting to children, but these wonders can not be revealed by talking about them or by weaving fanciful tales about natural events.

There is a truth, deeper than scientific fact and more significant in the lives of children, contained in such a story of animal life as that of the squirrel mother and the elf, which forms a chapter in Selma Lagerlöf's The Wonderful Adventures of Nils. And does not Kipling in his whimsical and altogether delightful way answer to the entire satisfaction of young minds some of the whys and wherefores that beset them?

In the class of short realistic stories for little children few writers of real power have made any contribution. At first this fact seems unaccountable when one considers that writers of ability have not deemed it beneath them to collect, edit, and revise folk material for little children, and that not a few writers of genius have produced delightful fairy stories, fairy plays, and fanciful tales. In the matter of fairy plays, witness the noteworthy list of comparatively recent productions: "Peter Pan," "The Blue Bird," "The Good Little Devil," "Snow-White," "Racketty-Packetty House." Probably adult mind and child mind are much more nearly on a plane in the realm of fancy, while in the realm of the real everyday child life with its small problems and events it is almost impossible for a grown-up to get down close enough to see from the child's standpoint. Certain it is that there is a sad lack of stories of the realistic type having any claim to literary merit.

It seems very important that teachers should have a wide range of stories from which to select. In the use of stories much depends on the teacher's own taste and temperament, and better results are obtained where the individual has a large degree of freedom in the matter of choice.

SYMBOLIC PLAY.

Harriet Niel.

As a student kindergartner I had the rare privilege of being assigned by Miss Blow to a public kindergarten presided over by a perfect living symbol of a woman who had preserved into her then mature womanhood this childlike quality of expert symbol maker, of finding life at the center of its symbolic aspects. She had kept childhood's spontanaeity, which was not excitement, multiplied adjectives or superlatives, but literally she had kept the spirit of a tranquil while joyous oneness of feeling and sureness of kinship with childhood.

Her kindergarten was fresh every morning as the new day and not fagged at noon when repetitions were in order. She so questioned or suggested that children responded in the words of new song or game without any realized ordeal of repetition, and with the zest of a new experience. Her method was akin to that by which the normal nursery child knows, not without effort so much as by means of the most spontaneous and rewarding of efforting, his Mother Goose.

She did it all by a touch so light but irresistible that we grown assistants forgot we were grown, and entered with the children that enchanting realm where all normal souls from 3 to 6 are at home. Into butterfly life and bee and bird and garden we went, wholly akin to all the lives we were borrowing. Critics and investigators from near and far came and went without spoiling or changing that lively, absorbed, but unself-conscious spirit. There was no overwroughtness, nor was it in the least a soft or sentimental kindergarten, but a realm in which personal surrender and recapture went on as unconsciously as when a group of children play alone.

There was a community spirit I have seldom seen matched. I do not remember any assigned leaderships nor any too often appropriation of leadership by special children. Each new game took shape more or less in Mrs. Hubbard's mind just there in the presence of the children, and they caught from her, and she from them, the spirit and the form which shaped itself before our very eyes into the lasting ceremonial of many of our present games. I can see her evolving the spirit and the exquisite flight of birds with different sets of children through successive years, and the life of it was as fresh in her the last time as the first. It was the height of the kindergartner's art as to the symbolic spirit of play. I believe the secret was largely because she herself was a living symbol.

I believe this symbolic spirit to be in all normal childhood, refashioning facts by fancy, seeing much in little, being a whole bird because you spread simulating wings, feeling the whole life of every other thing which it touches only at a telling point, but touches with this creative wholeness of feeling. As the scientist from a fragmentary fin reconstructs the whole fish that was, or from a leaf the tree on which it grew, so does childhood, choosing its portion, forefeel life's wholeness, not content with the unrelated fact.

Early childhood takes the fact for what it is best worth, and sets about finding not alone its qualities and attributes, but its affiliations, its tetherings, its implications, its adaptability to other purposes than those it serves to common sense. The child's ready fancy changes chair to chariot, stick to horse, prince to frog and back again, and himself to everything in turn. No hesitations mark these early forms of his democracy, and so he is never lost but to find himself again.

Miss Martin spoke as follows on plays and games.

The subject of plays and games in the kindergarten include the following forms of physical activity:

First. Those plays in which activity for its own sake is the chief interest. These include walking, running, jumping, hopping, skipping, clapping, etc.

Second. Representative or imitative plays in which the child reproduces some form of life going on about him. In other words, these are plays in which the movement is suggested by an idea to be expressed. This class includes the gallop of the horse and the hammering of the carpenter.

Third. The singing game and folk dance of the traditional game of the kindergarten—*Oats, peas, beans.*

Fourth. Simple games of skill. This class includes all sense games, ball games, and all games involving competition.

Fifth. The dramatic game of the kindergarten.

I would like to make it perfectly clear in the beginning of this paper that this division of the subject does not imply that this is the order in which the different kinds of play shall be introduced, but these five groups include all of the forms of physical activity commonly used in our kindergarten plays.

There should be, however, a certain progressive development from these spontaneous movements of the little child to the form of the folk dance.

After the exercise of each of the various activities by itself, I would lead to the combination of these movements in a little dance form, for instance, walking and skipping, or skipping and hopping. This requires more physical and mental effort on the part of the child and leads him to see the possibilities of further combinations.

To illustrate: In a kindergarten I know the children had been working along this line of development and had reached this form in which we walked forward eight steps, then skipped eight steps, etc. The first variation added was that of walking eight steps, then standing still and counting eight, repeating this figure throughout the play. The next one was that of standing still and clapping, then walking forward. To quote the particular child: "We should walk in the walking eight steps, stand still in the skipping eight steps and clap, and then do it all over again." This in turn led to walking and skipping, clapping as we skipped. This latter figure was more elaborate and required a good deal of control—both physical and mental—in order to be able to change at the right time and to make the changes that had been suggested. This year in this kindergarten the triangle gave the signal for the children to change—they asked later that they might count aloud without the triangle; later still the request came that the counting stop and that no teachers help. This showed a decided growth in power and the children's consciousness of it. These simple forms of activity underlie many game forms.

These simple plays are of interest to the children for three reasons:

First. They make use of a pleasurable activity common to the group.

Second. They involve the element of contrast.

Third. They allow for much repetition of the original and contrasting movements.

Since we find these simple activities the basis of most games and folk dances, it seems wise to use them in the kindergarten before the children have gained sufficient control to follow a variety of figures or sing and play the more formal games.

In the second group of games we find the same simple forms of activity, but the movement is dominated by the idea. We walk on tiptoe because we are brownies, we take long steps because we are playing that we are giants, we take short running steps because we are fairies. The music often leads to a better movement, for instance, the piano suggests a soldier play, the beating of a drum or blowing of a horn. It suggests the sound in the distance, which becomes louder as the soldiers draw near, then dies away as the soldiers walk away.

Some of these movements may be illustrative of a song, as the rocking of a cradle, the swaying of the pendulum, the rap-a-tap-tap of the shoemaker's hammer, or the strong, steady swing of the blacksmith's hammer. All provide good arm and body exercise and are made spontaneously by the children because of their interest in these subjects and of the distinctly rhythmic character of the movement itself. Here we find the same opportunity for the development of the children's experimentation and spontaneous expression into the permanent game form.

In these plays the child should be asked to represent only those objects and activities which he would naturally represent in this way and which are near enough to his own experience so that he may give them a true representation. The majority of them are too difficult for the following reasons:

First. Little children under 6 years of age do not possess sufficient control to sing and play at the same time, their interest is in one activity at a time, and as motor activity is of greater interest at this period, the song suffers and the result is a solo by the teacher or possibly a quartette by typical kindergarten children.

Second. The figures require such careful and precise movements that the joyous spontaneity of the dance is lost. It would seem to me, therefore, that the great field of opportunity for the kindergartner lies in original work—by this I mean the development and organization of simple dance forms from the children's spontaneous response to music and to suggested ideas. Often the form of the traditional game may be retained with a change of content.

In the games of skill we include all sense games, all games with balls, ball bouncing, and rolling at a target in the middle—all of the games testing the strength of the children such as the racing games, throwing of bean bags and balls, jumping over ropes or hurdles, hiding games, etc. Here we have the opportunity to give the children more vigorous physical exercise. Many of these games demand more space in which to play than the kindergarten room affords. This means we must play more out of doors and give the children the benefit of the fresh air as well as the splendid, free physical movement which comes in their out-of-door play.

The dramatic play of the kindergarten is representative in character but has usually the dramatic quality of several situations in it, leading to a climax. In playing store we have the mothers represented as desiring food—they go to the store, buy, and return home to prepare the dinner. If we are playing about the blacksmith, we find him at work at his forge. The driver drives in to have his horse shod. The shoe is put on and the driver hurries away to his work.

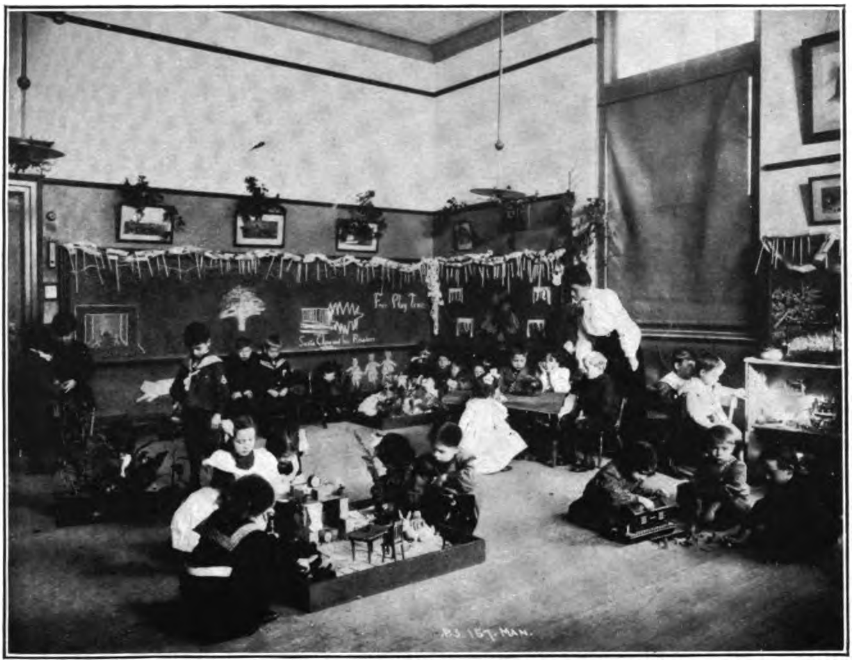
In closing, I would like to urge particularly the following points:

First. That our plays and games be more simply organized.

Second. That the children have a part in this organization by means of their own expression and suggestion.

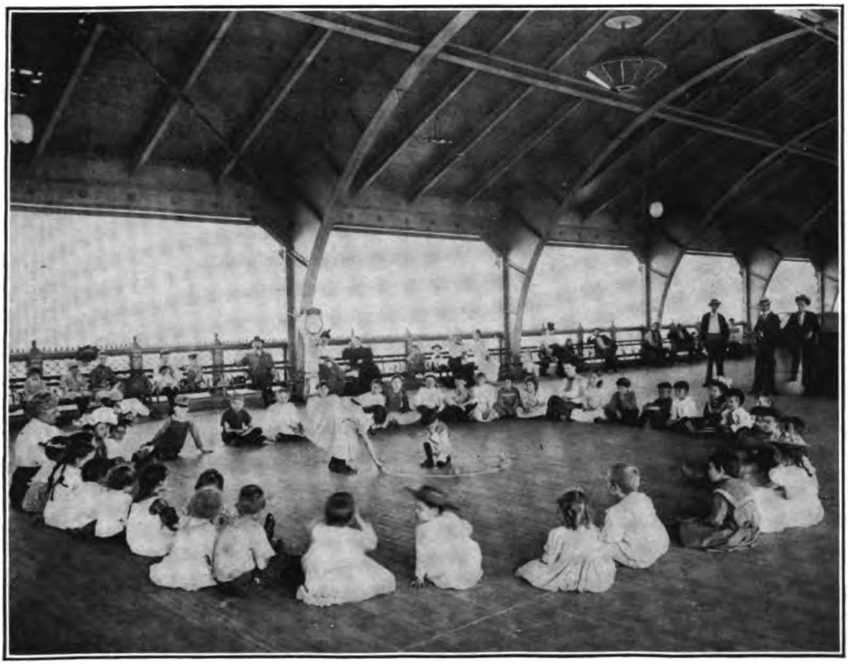
Third. That the teacher see to it that the children play more vigorous games—out of doors—in an empty room or gymnasium where there would be space for healthful, life-giving physical exercise.

Some simple apparatus would doubtless aid in this and I believe the time is coming when the right forms for young children will be devised and used more commonly than at present.



A. "LET US PLAY HOUSE."

This shows a period of play with dolls, toys, etc., not directed by a teacher, but self-directed by the children.



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How a New York recreation pier is utilized for a kindergarten.

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UNITED STATES BUREAU OF EDUCATION

BULLETIN, 1914, NO. 7 - - - - - - WHOLE NUMBER 578

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CONTENTS.—Introductory notes—Publications of associations—Educational history—Fichte anniversary—Current educational conditions—Pedagogics and didactics—Educational psychology, Child study—Special methods of instruction—Special subjects of curriculum—Kindergarten and primary school—Rural education—Secondary education—Teachers: Training and professional status—Higher education—School administration—School management—School hygiene and sanitation—Sex hygiene—Physical training—Social aspects of education—Child welfare—Moral education—Religious education—Manual and vocational training—Vocational guidance—Home economics—Commercial education—Professional education—Education of women—Blind and deaf—Education extension—Laboratories and museums—Libraries and reading—Bureau of Education: Recent publications—Periodicals indexed in this number—Bulletin of the Bureau of Education.

INTRODUCTORY NOTES.

The following is a representative selection of noteworthy books and articles listed in this bulletin, the numbers in parentheses referring to the numbers of the full entries:

National education association, Journal of proceedings and addresses, 1913 (177); Eliot, Observations in China and Japan (191); Vermont educational commission, Report, complete (199); Emerson, Evolution of the educational ideal (209); Maxwell, On a certain arrogance in educational theorists (212); Bailey, Art education (224); Cubberley, Rural life and education (253); Tombo, University registration statistics (289); New York City, Committee on school inquiry, Report (300); Terman, Hygiene of the school child (315); Coffin, The socialized conscience (331); Mansbridge, University tutorial classes (377).

Of the publications listed, only those named in the section headed "Bureau of Education: Recent publications" are available for free distribution by this office. All others may ordinarily be obtained from their respective publishers, either directly or through a dealer, or in the case of an association publication, from the secretary of the issuing organization. A list of periodicals indexed, with places of publication, may be found at the end of this bulletin.

Books, pamphlets, etc., intended for inclusion in this record should be sent to the library of the Bureau of Education, Washington, D. C.

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, September 29, 1913.

SIR: For a large portion of the children of the United States vocational education must mean education in agriculture and the arts of life on the farm. In recognition of this fact, agriculture is now taught in some way and to some extent in hundreds of public high schools and in the lower schools of many of the States. Possibly the greatest difficulty in teaching this subject is that of making it sufficiently concrete and practical. Too often the teaching begins and ends with the assignment and recitation of lessons from the pages of a textbook. To make the teaching effective each lesson must follow the necessary pedagogical order from concrete experience through interpretation and generalization back to concrete practical application. The pupil must become an intelligent worker and director of his own work and must learn not merely by looking on and listening, but by intelligent participation. The "Home-project plan" worked out in Massachusetts within the last few years and now applied in the State-aided schools of that State makes such intelligent participation possible. By requiring boys to do productive work as a means of instruction, it enables many boys to continue their studies in schools who otherwise would not be able to do so. By projecting the work of the school into the home in the vital way in which it does, it enlists the interest of parents and becomes a means of their education in this subject, thus affecting quickly the work on the farms of the community. Because of the wide interest in this subject, I recommend that the accompanying manuscript, prepared by R. W. Stimson, be published as a bulletin of the Bureau of Education. The report by William T. Bawden on the Types of Massachusetts Agricultural Schools, printed as an appendix, was jointly agreed upon by Mr. Bawden and L. S. Hawkins, L. H. Dennis, and L. H. Carris, of the State Departments of Education of New York, Pennsylvania, and New Jersey, respectively.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

THE MASSACHUSETTS HOME-PROJECT PLAN OF VOCATIONAL AGRICULTURAL EDUCATION.

Chapter I.

VOCATIONAL AGRICULTURAL EDUCATION.

1. ELEMENTS NECESSARY TO SUCCESS.

Agricultural education as a phase of vocational education is that form of vocational training which fits for the occupations connected with the tillage of the soil, the care of domestic animals, forestry, and other wage-earning or productive work on the farm. Vocational agricultural education is, thus, one phase of effort toward conserving the valuable years of youth for the best uses of both society and the individual.

There is now a general movement throughout our country for agricultural education of secondary grade. There are probably not fewer than 500 secondary schools in which agriculture is now seriously taught. The training varies from the study of an agricultural textbook in the hands of the general teacher, who does not bring to her task any special training, to the out-and-out vocational school, where the teachers are specialists in agriculture.

(1) **Profitable production the test of efficient training.**—Productive work of a high order of efficiency is coming to be considered the real test of all systems of vocational education of secondary grade. Particularly in vocational agricultural education it is coming to be accepted that the training must be such as to develop both skill and managerial ability. The competent farmer must be not only expert in the varied technique of his calling, but also a sound and progressive business manager.

(2) **Spectator versus participant.**—Neither skill nor business ability can be learned from books alone, nor merely from observation of the work and management of others. Both require active participation during the learning period in productive farming operations of real economic or commercial importance. The masterful constructive imagination may accomplish much for him who possesses it, and for his needs books and observation may finally result in vocational efficiency. The difficulty is that such powerful

imagination is so rare as to constitute him who has it a genius, far removed from the common run of boys 14 to 18 or 20 years of age who live on farms, who expect to follow farming for a living, and whose training is not likely to extend beyond that afforded by the vocational agricultural school.

(3) **Danger—Too much reflection, not enough action.**—In general, if there is a defect in the large agricultural schools which boys must leave home in large numbers to attend, and which, in order to secure adequate attendance to justify their cost, must apparently limit their training to six or eight fall and winter months, it is the defect of putting too great reliance upon books and observation, to the exclusion during the intensive learning periods of active participation in the type or types of productive farming the boys intend to follow after graduation. Too great, one may almost say in the cases of many of the boys fatal, reliance is put on the ability of the students once well grounded in sound theory at the school to put that theory into successful practice on their own farms, alone and unaided. Even if the large school undertook to put its plant and equipment to the strictest possible productive farming uses of a profitable commercial character, and to induct its students into its aims and to school them in its methods, its efforts would be more than likely to break down through sheer weight of numbers. School farms at present can hardly be claimed to be thoroughgoing commercial farming concerns. The most flattering school photographs, where the aims of the school are most emphatically practical, show by far too few actual participants and by far too many spectators. To see a thing done, however good the demonstration, is not to do it oneself. To participate in the carrying out of an enterprise planned and ordered by another—by even an agricultural-school instructor—may leave one little better than a gang laborer. The pittance paid per hour, where any pay at all is given, can hardly, as an incentive to keen interest and alert action, be considered comparable to the reward the student might hope to realize from an independent enterprise planned and executed by himself and wholly for his own profit or that of his family. It must be feared that, however excellent may be its work in selected demonstrations and in certain really valuable experiments, school farming must, from a strictly commercial point of view, always remain more or less artificial. Perhaps the best use to which an agricultural school, large or small, can puts its own land or equipment is that of demonstration. Most schools appear to have adopted this view. It is not clear, however, that any considerable number have adopted methods of training calculated to overcome their defects as agencies for graduating students thoroughly trained in the practice as well as theory of practical farming.

Startling and stupendous problem.—The problem, then, of providing for actual participation, both as manager and as worker, in productive farming, simultaneously with his classroom instruction, on the part of the boy in the agricultural school, may fairly be looked upon as the most startling and stupendous problem in the great field of vocational education. How shall it be solved?

2. THE MASSACHUSETTS HOME-PROJECT PLAN.

Massachusetts has developed a plan for the solution of this problem. This plan was fully set forth in the report submitted to the legislature in January, 1911, by the Massachusetts Board of Education. The legislature has provided State aid for carrying this plan into effect. A vocational agricultural school may be established by any town or city, or by any group of towns or cities which may voluntarily form themselves into a district for this purpose. Evening school classes in agriculture may be established by any school committee. The State has not been definitely divided into districts by the legislature, but certain counties have been authorized to maintain agricultural schools.

Provided an agricultural school, day or evening, large or small, taught by one teacher or more, with or without school land and live stock, with training extending over two, three, or four years, a school in general agriculture, or in such specialized production as market gardening—provided an agricultural school is approved by the Massachusetts Board of Education as to "organization, control, location, equipment, courses of study, qualifications of teachers, methods of instruction, conditions of admission and employment of pupils, and expenditure of money," the community, voluntary district, or county maintaining it is entitled to reimbursement from the treasury of the State to the extent of one-half the amount expended for maintaining the school from funds raised by local taxation. The State in agricultural as in industrial education contributes nothing toward the initial cost of land, buildings, or equipment.

Vocational agricultural departments may be established in selected high schools. The agriculture must be taught by a specially qualified teacher who gives his attention exclusively to agriculture. His vacation must be taken during the winter months, usually December, January, and February. He must continue his work throughout the summer. Little stress is laid on land or operations at the schoolhouse. Every possible stress is laid on the utilization of the land and equipment at the homes of the pupils; and it is the instructor's duty during the summer to supervise work prepared for in the agricultural classes, from seed time to the securing of the harvest. In the cases of such departments, the State reimburses the communities maintaining them to the extent of two-thirds of the salary of the agricultural instructor.

(1) **Part-time work in agriculture.**—A fundamental feature of the Massachusetts plan is embodied in what has been termed "part-time work in agriculture." The term "part-time work" is a descriptive expression brought over from current discussion of certain forms of industrial training, for use in unfolding the possibilities of this new type of training in the field of agricultural education. Part-time work in industrial education means that the student spends part of the time required for his training in the shop or manufacturing establishment, and part of the time at the school building, both school and shop work, however, being intimately related and supplementary to each other. Part-time work as applied to agricultural education means that the student must spend part of the time required for his education in productive farm work, preferably at home, and part of his time at the school, the farm work and school study being closely correlated by the school at points selected from season to season or from year to year, and the farm work being given the highest possible educational value by competent school supervision.

(2) **Economy, efficiency, adaptability.**—The part-time work plan reduces the cost of agricultural training of secondary grade so as to place effective training for the farm within reach of many communities which would otherwise be unable to secure it. Fifty departments in 50 groups of farms should cost no more than five large schools such as those found in other States. It obviates the necessity of sending the boy away from home in order to secure the benefits of agricultural training. The cost of living for the boy is less at home than it would be at a boarding school. Parents who need the help of their boys are deprived of their services during only a portion of the day. The plan also is proving to be wonderfully effective. Cooperative work between the school and the home farm is the most effective known means of trying out under the conditions of individual farms, over widely scattered areas, methods which have proved to be profitable elsewhere, as, for example, at the State Agricultural College or Experiment Station. Such cooperation furnishes effective experimental means by which each boy can try out the merits of the home farm as an agency for producing profits when treated by the best known methods. The principles and methods taught by the school can be positively adapted by each boy to the economic conditions of the farm on which he may spend his working days. Part-time work thus gives to agricultural teaching the reality of actual life as but little school training can give it. Under the part-time work plan, the instruction is adapted to all kinds of farming prevalent in the district surrounding the centers where the work is established. The practical applications of the instruction are thus subject to the obstacles con-

tinually encountered under economic farming conditions found in any given district, just as they are also aided by all the influences in a Commonwealth which make for the improvement of farming. Moreover, in the case of vocational agricultural departments in selected high schools, if for the moment the plan fails, due to insufficient enrollment or the fault of an instructor, the instruction may be stopped, and later be resumed when the local conditions become favorable; meantime there are no expensive buildings and equipment to rust out or rot down.

(3) **Productive farming as educational projects.**—The Massachusetts plan as an educational process becomes immediately effective, because farming activities readily resolve themselves into what may be termed farming projects. A farming project is a thing to be done on a farm. The thing done may contribute some element of improvement about the farm—as constructing a concrete walk leading to the front door; planting and nurturing shade trees; making and maintaining an attractive lawn. The thing done may be of an experimental[1] nature—as the planting of an untried variety of fruit, the feeding of an untried ration, the testing of an untried spraying mixture, or the testing of one or another of much advertised roofing materials. Finally, the thing done may be of a productive nature, as the growing of a crop of clover or alfalfa; the growing of a field of potatoes; the growing of a crop of silage corn, or the production of eggs for the market. A farming project is, further, something to be done on a farm which involves a limited and definite amount of equipment, materials, and time, and which is directed toward the accomplishment of a specified and valuable result.

Finally, a farming project, as the term is here used, is a thing to be done on a farm which, in the preparation for doing it and in the carrying of it out to a successful result, involves a thoroughgoing educational process. The improvement project of constructing a concrete walk to the front door might involve a study of the nature of cement; its action on sand, gravel, and broken stone; its resistant qualities to the weather; the seasons in which it might be used; its cost as compared with other materials, such as boards, plank, tar, brick, flagging, and asphalt; the mathematical determination of proportions of sand, cement, and stone to be used; the geometrical determination of the sections into which it should be divided, and whether it should be crowned or flat; the geographical sources of the raw material and the commercial conditions for purchasing the cement. The experimental project of planting an untried variety of fruit might involve a study of the probable adaptability of the variety selected to the soil of the farm, the climate of the locality, and the market demands within reach of the farm. The productive project of growing a crop of clover might involve a study of the various varieties of clover; the comparative adaptability of those varieties to the given field on which the crop must be grown and to the climate of the locality; the most reliable places for the purchase of seed; the best time for seeding; the best time for cutting; the best methods of curing and storing; the mathematical calculation as to the saving in cost of feeding stuffs which the crop would afford; the chemical elements it would furnish in the ration, and the beneficial chemical, biological, and mechanical effects on the soil in which it would be grown.

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[1] It is "experimental" only in the eyes of the boy or his father, for the Massachusetts instructor will encourage only such projects as have been proved elsewhere under like conditions to be feasible. To the instructor every project is a demonstration.

(4) **School projects and other farm work.**—The home-project or part-time plan of instruction, moreover, fits in nicely in its relation to the usual farm activities of the boy. The boy may help with the milking throughout his course, where the object is to get the cows milked as quickly as possible and where no records are kept. During certain months of at least one year the school should require whatever time may be necessary for keeping an accurate record in pounds and ounces of the yield of a part of the herd. This may be limited to the weighing of milk from a single cow and giving the cow credit for what she produces.

It may be part of the boy's business to assist in feeding the cows. During part of his course sufficient time should be given for weighing the ration and charging at least one cow with what it costs to keep her.

In the original routine to which he has been accustomed in milking, much or little attention may have been paid to the cleanliness of cows, utensils, or the person and clothing of the milker. During part of his time in school the boy should be given whatever time may be necessary for milking at least one cow and preserving her milk under absolutely sanitary conditions, and for sampling the milk for bacteriological tests at the school.

In the original cropping of the farm, much or little attention may have been paid to leguminous crops. During one season at least facilities should be given the pupil for growing a patch of moderate size of clover, and for observing the effect of introducing a large proportion of clover into the ration of the cow.

In the ordinary conduct of the farm much or little attention may have been paid to the selection and testing of corn for seed. But, prior to planting, one season at least, the boy should be given whatever time may be necessary for making germination tests of the corn which it is proposed to plant; also during one season the boy should be given control of a portion of the corn field for making an "ear to row" corn test, for observing the difference in yield between different ears of corn—all the corn from one ear being planted in one row, and all the corn from another ear being planted in another row.

In the ordinary routine of the farm it may be that the boy is required to tend the poultry. During at least one year he should be given control of at least one pen of poultry, and facilities for feeding a balanced ration and trap nesting individual birds for comparison of productivity in laying.

It may be part of the usual work of the boy to help cultivate and harvest the potato crop. During one season at least he should be given facilities for testing the value of the use of formalin for the prevention of potato scab and of the Bordeaux mixture for protection against potato blight.

It may be part of the usual work of the boy to assist in the apple harvest. During one season at least he should be given facilities for pruning at least one tree, spraying it, if it is at all infested by scale, of cultivating under it and fertilizing it. During one season, also, he should be given facilities for grading and packing the fruit from at least one tree and of disposing of the product with a view to securing fancy prices for at least part of the crop. If he could be given control of a block of five trees, and were a fairly husky boy of 15 to 17, the rewards for his work and incentives to intelligent action would be so much the greater.

(5) **Counting the cost of farming.**—An essential feature of the home-project or part-time plan of training is the consideration of cost at all points. The boy by this method learns first of all through his own experience that there can be no product without cost and no profit without excess of receipts over all expenditures. After such an experience he will not be likely to undertake a new enterprise without a serious attempt to estimate accurately his probable profit. The boy is subjected to the prevailing economic conditions under which the home farm must yield a profit or loss at the end of each year of work. The methods by which the boy becomes on a small scale a farmer or business man for himself gives the project which he is carrying on and the school work in which he participates a reality not otherwise attainable. It heightens measurably his interest in the work and in the related study of the school, and must fix better than by any other device the training which he is receiving.

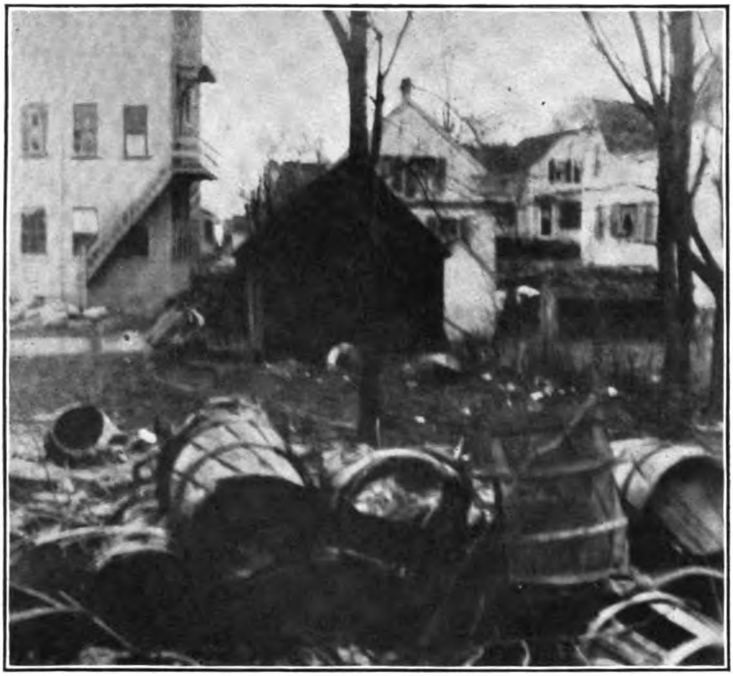
(6) **Parents pledge home cooperation.**—One indispensable condition prior to the establishment of the agricultural departments is that the parents of the boys who desire to take the course shall agree to furnish the facilities necessary for the practical carrying out at the homes of the boys of the teachings of the agricultural instructors, not everything in any single year, but something every year. Parents of farm boys who seek admission to a separate or county agricultural school must also meet this condition. In the cases of village or city boys who think they desire to become farmers, either the parents, or the schools on their behalf, must provide the required facilities for

productive farm work in connection with the phases of farming taught these boys in the classroom.

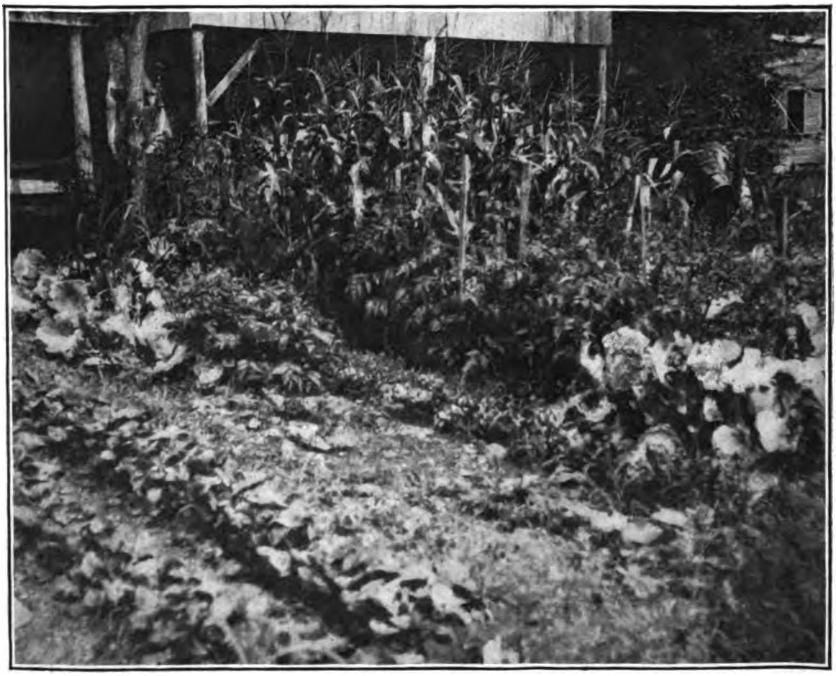
(7) **Advisory committee.**—Another condition precedent to the establishment of vocational agricultural training in any given locality is the appointment of an "advisory committee" consisting of five progressive farmers to cooperate with the agricultural instructor, or instructors, in adapting the agricultural training to the particular needs of that locality. It is considered desirable, moreover, that at least one member of this committee shall be chosen from among the parents of boys in the agricultural classes and that one shall be a farm woman.

(8) **Promising solution ofproblem.**—The home-project or part-time plan has attracted wide attention among Massachusetts educators, and its results are being watched with the greatest interest. Many now believe that home farm work, supervised by the school, where conditions are at all like those in Massachusetts, might well be substituted very generally for the present methods of little work, or no work at all, of a *managerial* nature now found in connection with vocational agricultural school training; and that the project method of bringing agricultural science immediately to bear on actual farm practice, in commercial agricultural enterprises, conducted by the boys themselves on their own home farms, is a promising solution of our most pressing problem in this field of vocational training.

A. Young people respond.—This plan was first tried at Smith's Agricultural School, Northampton, Mass. Beginning with the school year 1908–9, this school, of which the writer was then director, has employed a man throughout the summer for the express purpose of assisting the boys in applying the teachings of the school in their home farm work. This man goes from farm to farm, with authority over specific operations. The approach is very modest. It is through the boy. But the work is done on the father's farm, and under the father's eyes. The father may himself follow the methods taught by the school or department in his own larger scaled operations, and not a few of the fathers of the boys are now doing this. The efforts of the supervising instructors, however, are primarily for the assistance of the boys. If the instructors are scrupulously careful to avoid the slightest appearance of interference with the operations of the fathers, they are no less insistent upon the right of their pupils to follow the methods learned at school in the execution of their home projects. This method immediately appeals to the motor instincts and activities of boys of secondary-school age. The success of boys in the corn growing clubs in many States shows that boys instantly respond to help at home. A school-boy of 16 at a recent Massachusetts corn show won the sweepstakes against all comers, including the sweepstakes winner of the previous year at the big New



A. A NORTH EASTON BOY'S BACK YARD BEFORE HE BEGAN STUDYING AGRICULTURE.



B. THE SAME BOY'S BACK YARD AFTER HE BEGAN STUDYING AGRICULTURE.

England corn show, for the best single ear of corn and also the best collection of 10 ears. He had been given seed by the former winner, and had been told and shown out of school hours what to do, and when and how to do it on his father's land. The man who helped him said "That boy has pumped me all summer." Most boys, like most men, learn best by being told and shown on the field of action. Moreover, this sort of response, by which the pupil, and not the teacher, does most of the "pumping," is not only a delightful school experience, but it is, also, counted upon as a fundamental educational factor of the Massachusetts home project plan.

B. *Earning and learning.*—This method offers the boy, all too eager to quit school for work on reaching his fourteenth birthday, a strong incentive to continue in school, because it bids fair to make him an earner while still a learner. Boys like to feel that as members of the family they are at last able to pay their own way. The highest net profit, so far reported, which was made by an agricultural pupil in 1912 from a home-farm project where live stock was used was $270.24.[1] By "net profit" is meant the profit after the pupil has paid himself for his own labor and met all other expenses in connection with his project. There were some failures to show profit from project work. Figures were radically reduced in a few cases by unseasonable frosts, drought, or blight. One boy's garden was cut back three times, at considerable intervals apart, by killing frosts.

On the whole, the returns were creditable and encouraging.

Twenty-five boys—five from each of five unlike farming sections in Massachusetts, where this plan was in operation in 1912—earned from farm work in connection with making excellent records for scholarships at school, $5,102.30. At the end of this chapter will be found two pages giving details regarding the individual projects of these boys. The table may serve to illustrate, also, the items of accounting for which the pupils are held responsible.[2]

3. PRIZES AND HOME PROJECTS.

Prizes offered by the 30 or more incorporated agricultural societies, each of which receives $200 a year from the State for such purposes, and by other agricultural and horticultural associations, are proving to be important incentives to home-project work. The agricultural department at Hadley headed the list of winners in 1912 by adding to its local prizes the championship of the State in stock judging. The total amount awarded the Hadley pupils was $243 at fairs, and a trip to Washington, D. C., won in a corn-growing contest under the auspices of the Massachusetts Agricultural College.[1] Working strictly for profit in a number of cases the past year did not permit of competing for prizes; but the two lines of effort may be harmonized, and, one being conducted as supplementary to the other, the intelligence brought to bear by the boys on their productive farm work can not but be made the keener by such contests.

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[1] In this case the pupil had paid himself for labor $109.02. His direct earnings from this project were therefore $379.36. During this period this pupil was allowed, also, $200 credit for other farm work done at home. The cash and credit received by this pupil for farm work during the whole project period, therefore amounted to $579.26. But the accounts covering this project showed the following interesting and significant sums paid or allowed other members of his family: $109.02 for labor, man or horse; $662.47 for rent, hay, etc., or a total for the others of $771.49. This pupil graduated from the Smith's Agricultural School at Northampton in June, 1912. A tabulated statement from the accounts of five pupils from each of the five points in the State where home work had been supervised in the school year 1912 is given on pages 18, 19. No figures for Easton are given, because the vocational agricultural department at that place, as stated in the text, did not begin work until September, 1912.

[2] Thirty boys—five from each of six points—earned from farm work, in connection with the study of their agricultural projects, in 1913, $9,728.03. The scale and the number of the projects carried by the boys in 1913 were practically twice as great as those in 1912.

4. HOME PROJECTS OF NONRESIDENTS.

The Massachusetts law provides that pupils from other towns may attend vocational agricultural schools or departments, and that tuition on their behalf, at rates fixed by the board of education, shall be paid by their home towns. On account of tuition, however, the State reimburses the home towns of nonresident pupils to the extent of one-half the amounts paid.

Attendance of nonresident pupils is subject to approval by the board of education, and their home projects must be properly supervised. This provision is extending the influence of vocational agricultural instruction and supervision over a widening area. One instructor has ridden a circuit the past summer of between 50 and 60 miles, when traveling by the most direct route from boy to boy enrolled in his classes, and his duties as supervisor have taken him regularly into six towns. Another has a circuit of between 40 and 50 miles. The shortest round trip was 30 miles. It may more than once happen that a town which could not alone command a sufficient enrollment to justify the maintenance of an agricultural department in its high school may with the aid of a few nonresident pupils be able to do so. With the extension of its influence, there goes a fair distribution of the cost of maintaining this type of training by means of the State-aided tuition payments.

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[1] One hundred and thirty boys, each under 19 years of age, are reported to have competed at local fairs for the preliminary prizes of $15, $10, and $5 in gold. Hadley won first at Amherst and again first at Northampton. At the final contest in Brockton there were 15 competitors, with scholarships at Massachusetts Agricultural College to the value of $150 and $50 offered, and both were won by Hadley. There were five classes to be judged, and a perfect score in each was 60 points for placing and 40 points for reasons, or a possible grand total for the five classes of 500 points. The educational value of the contests was shown markedly in the cases of the Hadley boys, who entered the preliminary contests at both Amherst and Northampton. The five boys who entered both learned so much from their experience at Amherst that they raised their rating in the Northampton contest a total of 217 points, an average of about 40 points each. Other agricultural pupils have won generous amounts, those of the Smith's Agricultural School heading the list, leaving the Brockton fair out of account, with a total of $59 won at local fairs.

5. SALARIES FOR HOME-PROJECT INSTRUCTION AND SUPERVISION.

It will readily be understood that the teaching and supervision necessary to the successful development of the school and home farm cooperative plan of vocational agricultural training require instructors of exceptional ability, both as practical farmers and as students of the various phases of agricultural science which bear upon productive agriculture. So far admirable selections appear to have been made. A fortunate feature of the legislation providing State aid is that there is no limit fixed for salaries. The best man for any given position may be selected, and the local authorities may pay whatever they feel their peculiar conditions warrant in order to secure and retain his services. The salaries at present range from $1,000 to $2,000 a year for members of staffs below the grade of principal or director; but there is an evident desire, wherever possible, to start the instructor at about $1,200 a year.

6. CULTURAL AND AGRICULTURAL.

The division of time in carrying out the school and home farm cooperative method of training, whether in agricultural departments in high schools or in the separate agricultural school, is as follows: For the execution of the projects, including work during vacations and other out-of-school hours, 50 per cent, and for the related study, 30 per cent. The remaining 20 per cent of the time of the boy is devoted to general culture and good-citizenship instruction, wherein systematic courses may be provided in such subjects as English, history, civics, current events, mathematics, and science.

7. FARMING AND GOOD CITIZENSHIP.

Good educational results have already been achieved. It is believed that the Massachusetts plan of vocational agricultural training will justify itself from every reasonable point of view, and will prove to possess undeniable merit as a plan of training both for farming as a definite calling and for intelligent and vigorous participation in the community life of any Commonwealth.

State-aided vocational agricultural education—Examples of the

School or department.	Pupil's age.	Project or projects.	
		Title.	Scope.
1	2	3	4
Northampton	18	Dairying	12 Jerseys, Nov.-June
Northampton	19	Hot-bed	Mar. 1-June 7
		Poultry	22 R. I. Reds
		Potatoes	½ acre
		Strawberries	1,000 plants
Northampton	18	Hot-bed	Early spring
		Potatoes	½ acre
		Poultry	28 White Leghorns
Northampton	18	Poultry	52 Barred Rocks, 4 months
Northampton	20	Alfalfa	Seeding down 1½ acres
Petersham	15	Garden and potatoes	⅛ acre each
Petersham	14	Garden	⅛ acre
Petersham	14	Garden	1/16 acre
Petersham	17	Garden	⅛ acre
Petersham	15	Garden and potatoes	¼ and ⅛ acre
Hadley	17	Fruit and corn	1 acre c., 118 apple trees
Hadley	18	Bees, poultry, corn	3 hives, 25 R. I. Reds, 1 acre c.
Hadley	15	Corn and poultry	1 acre c., 19 birds, 30 chicks
Hadley	18	Fruit and poultry	20 apple trees, off year, and 100 birds
Hadley	16	Poultry	34 R. I. Reds
Northborough	17	Sweet peas	128 sq. rods
Northborough	16	Garden	91 sq. rods
Northborough	16	Potatoes and corn	⅛ acre p., 1 acre c.
Northborough	17	Corn and potatoes	1 acre c., ½ acre p.
Northborough	16	Potatoes	½ acre (drought)
Harwich	15	Garden	½ acre
Harwich	17	Garden	1 acre
Harwich	17	Garden	⅛ acre
Harwich	17	Garden	½ acre
Harwich	14	Garden and potatoes	⅛ acre
Total for 25 pupils			

income of pupils from farm work during attendance at school.

Pupil's project income.			Other family income from pupil's project.			Cash or credit received by pupil from farm work during project period.			
Net profit.	Paid self for labor.	Total.	Labor, man or horse.	Rent, seed, etc.	Total.	At home.	Away from home.	His own project.	Grand total.
5	6	7	8	9	10	11	12	13	14
$270.24	$109.02	$379.26	$109.02	$662.47	$771.49	$200.00	....	$379.26	$579.26
37.80	8.80	46.60	....	4.95	64.30	180.00	$14.75	122.94	317.69
16.94	6.00	22.94	....	25.05					
16.28	2.42	18.70	3.10	6.40					
26.65	8.05	34.70	16.80	8.00					
11.04	3.46	14.50	....	1.73	37.16	175.00	68.00	[1]51.81	294.81
3.68	3.82	7.50	4.83	8.44					
28.74	4.52	33.26	....	22.16					
19.22	13.72	32.94	....	16.10	16.10	....	162.50	32.94	195.44
....	4.83	4.83	9.97	31.35	41.32	....	145.05	4.83	149.88
93.30	16.76	110.06	29.45	1.00	30.45	100.60	48.00	110.06	258.66
44.35	12.00	56.35	5.00	15.35	20.35	164.60	6.08	56.35	227.03
10.67	20.00	30.67	4.00	4.75	8.75	150.00	2.50	30.67	183.17
14.03	11.80	25.83	4.65	16.60	21.25	63.50	22.50	25.83	111.83
18.00	15.00	33.00	23.53	....	23.53	32.10	30.00	33.00	95.10
68.00	8.45	76.45	47.14	36.75	83.89	157.50	27.00	76.45	260.95
58.50	38.50	97.00	8.00	16.00	24.00	116.00	....	97.00	213.00
28.27	20.20	48.47	10.80	10.50	21.30	232.00	15.00	48.47	295.47
20.15	6.15	26.30	3.00	2.00	5.00	47.30	126.30	26.30	198.90
7.65	13.50	21.15	....	3.00	3.00	202.50	12.50	21.15	236.15
43.00	14.70	57.70	....	....	....	168.00	....	57.70	225.70
30.00	3.00	33.00	3.13	6.00	9.13	185.00	15.00	33.00	233.00
23.50	13.80	37.30	5.85	12.65	18.50	197.50	....	37.30	234.80
33.10	11.25	44.35	9.25	46.95	56.20	132.00	5.00	44.35	181.35
.92	7.57	8.49	1.40	23.60	25.00	167.50	....	8.49	175.99
31.27	15.20	46.47	6.00	2.50	8.50	12.00	....	46.47	58.47
75.00	18.10	93.10	1.90	5.00	6.90	5.00	10.00	93.10	108.10
12.63	22.40	35.03	1.20	4.00	5.20	65.00	....	35.03	100.03
15.92	6.70	22.62	1.40	1.30	2.70	75.00	5.00	22.62	102.62
7.90	7.00	14.90	9.62	....	9.62	12.00	38.00	14.90	64.90
1,066.75	446.72	1,513.47	319.04	994.60	1,313.64	2,840.10	752.18	1,510.02	5,102.30

[1] Project income, less shrinkage in inventory of $3.45, gives $51.81.

Chapter II.

AGRICULTURAL PROJECT STUDY.[1]

INFORMATION AND SUGGESTIONS FOR SCHOOL OFFICERS AND INSTRUCTORS AS TO COURSES AND METHODS OF AGRICULTURAL PROJECT STUDY APPROVABLE FOR STATE AID IN MASSACHUSETTS.

1. PRODUCTIVE WORK AND RELATED STUDY.

The home-project or part-time plan of vocational agricultural education embodies, as has been shown in Chapter I, two distinct features. One is productive farm work, supervised by a special agricultural instructor, or group of agricultural instructors; the other is study directly related to that productive work. Both are essential, and for each careful provision must be made.

Of the two, it may, perhaps, prove to be an easier task for the special instructor to inspire and to direct competent agricultural production than to amplify and organize the training of his pupils so as to insure thoroughgoing study directly bearing upon their individual enterprises. Study directly bearing upon the projects of the pupils is called "project study."

2. PROJECT STUDY SUITABLE FOR VOCATIONAL AGRICULTURAL SCHOOLS.

(1) **Range and progress.**—Beginning with the boy of 14, who entered a vocational agricultural school in September, 1911, we may graphically represent the contemplated progress of his training from year to year by the following diagram. (See fig. 1, p. 23.) His training should make him acquainted with farm life and affairs in general, and especially well informed and competent in the particular fields covered by his special projects. No boy is required to carry out projects in every field here listed.

(2) **Studies not on diagram.**—Such subjects as agricultural botany, agricultural chemistry, history, civics, and English occupy other portions of the time of the pupils in a regular four-years course.

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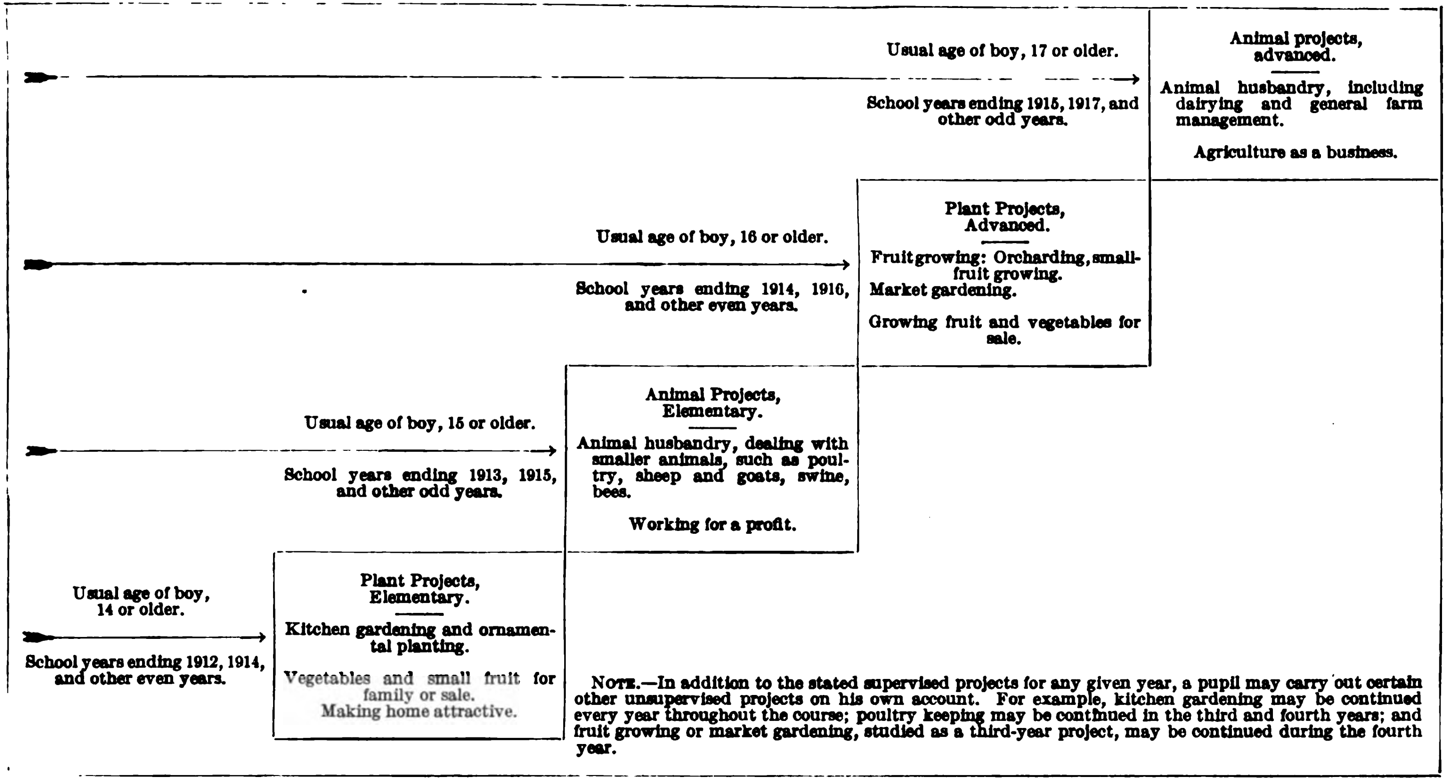
[1] This chapter is chiefly a reproduction of materials published by the Massachusetts Board of Education in its Bulletin No. 8.


Usual age of boy, 17 or older.
School years ending 1915, 1917, and other odd years.
Animal projects, advanced.
Animal husbandry, including dairying and general farm management.
Agriculture as a business.
Usual age of boy, 16 or older.
School years ending 1914, 1916, and other even years.
Plant Projects, Advanced.
Fruit growing: Orcharding, small-fruit growing.
Market gardening.
Growing fruit and vegetables for sale.
Usual age of boy, 15 or older.
School years ending 1913, 1915, and other odd years.
Animal Projects, Elementary.
Animal husbandry, dealing with smaller animals, such as poultry, sheep and goats, swine, bees.
Working for a profit.
Usual age of boy, 14 or older.
School years ending 1912, 1914, and other even years.
Plant Projects, Elementary.
Kitchen gardening and ornamental planting.
Vegetables and small fruit for family or sale.
Making home attractive.

NOTE.—In addition to the stated supervised projects for any given year, a pupil may carry out certain other unsupervised projects on his own account. For example, kitchen gardening may be continued every year throughout the course; poultry keeping may be continued in the third and fourth years; and fruit growing or market gardening, studied as a third-year project, may be continued during the fourth year.

FIG. 1.—School project-study diagram.

3. PROJECT STUDY SUITABLE FOR VOCATIONAL AGRICULTURAL DEPARTMENTS IN SELECTED HIGH SCHOOLS.

(1) Necessary groupings.—In order to enable one agricultural instructor to direct the project work and study of each of his pupils during a full half of the school time through a four-year course, groupings by years and projects like those in the following diagram are necessary. These groupings hold during the fall and spring terms. Certain other studies, like those above stated as open to separate agricultural school pupils, may be taken during the winter and during the fall and spring terms; but, if taken, must be so timed as not to interfere with the agricultural project work and study.[1]

School years ending 1912, 1914, and other even years. **First and second year pupils, one-half school time.**	**School years ending 1914, 1916, and other even years.** **Third and fourth year pupils, one-half school time.**
Agricultural science and projects applied to a given community: **Kitchen gardening**—Vegetables, small fruits. **Ornamental planting**—Shrubbery, flowering plants, lawns. **Farm shop work**—Making and repairing for home and school use—hot beds, cold frames, etc.	**Agricultural science and projects applied to a given community:** **Farm animals**—Types, breeding, management. **Farm buildings**—Sanitation and conveniences, plans, construction, upkeep. **Farm crops** for keeping the animals, rotations, balancing, cultivation, etc. **Farm machines** and implements, their use and repair.
School years ending 1913 1915, and other odd years. **First and second year pupils, one-half school time.**	**School years ending 1915, 1917, and other odd years.** **Third and fourth year pupils, one-half school time.**
Agricultural science and projects applied to a given community: **Small animals**—Poultry, sheep, swine, bees—types, breeding, management, rations, etc. **Buildings and equipment** for small animals—plans, cost, etc. **Home-grown crops** for small animals, kinds, quantities, seeds, soils, place in farm crop rotation, fertilizing, tillage, harvesting, storage. **Farm shop work** and other construction.	**Agricultural science and projects applied to a given community:** **Fruit growing**—Orcharding and small fruits not before dealt with, propagation, cultivation, packing, etc. **Market gardening**—Markets, soils, seeds, fertilizers, tillage. **Buildings and appliances**, plans, devices, implements and machines—cost, use, and upkeep. **Farm shop work** and other construction.

Fig. 2.—Department project study diagram.

(2) Agriculture first.—The regulations governing these departments further require that when conflict is unavoidable or when, as at planting time, continuous application for a number of consecutive days to his projects becomes necessary, all else must yield to the pupil's proper agricultural instruction, no matter at what cost for the time being to his other studies.

Economic returns as direct incentives to competent training are fundamental here, as in the training of vocational agricultural schools.

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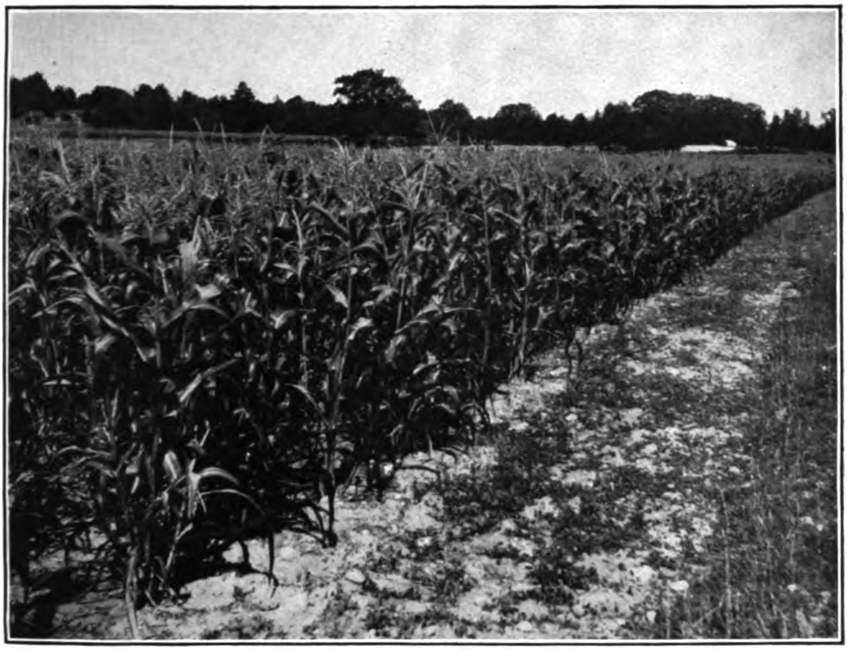
[1] The agricultural instructor is given his vacation in winter. A glance at the diagram (fig. 2) will show that in both odd and even years he carries responsibility for both plant projects and animal projects. He is thus well prepared to answer questions of farmers whenever they may turn to him for advice.



A. HOME PROJECT—2½ ACRES OF SWEET CORN.

B. AN "EXTRA" HALF-ACRE MARKET-GARDEN PROJECT.

A. SCHOOL SEED-BED PROJECT AT HOPKINS ACADEMY.

B. COLONY HOUSE AND YARD. ONE OF SEVERAL CONSTRUCTED AND USED BY A POULTRY PUPIL AT HARWICH.

If experience shows that instruction in the departments should be limited to first and second year projects, pupils desirous of third and fourth year project training may later be provided for in the separate or county agricultural schools.

4. PROJECT STUDY CONCENTRATION. YEAR LIMITS.

(1) **Pupil.**—As shown by the foregoing diagrams, the range of the boy's training is expected to be somewhat extensive, covering typical farm products which are feasible for his neighborhood. It is designed, however, that the training of each year shall be complete in itself; also, whatever other projects he may undertake or continue on his own account, that the pupil's first duty in any given year shall be the carrying out of certain projects selected from the groups assigned to that year for study.

(2) **Instructor.**—Similarly, while an agricultural instructor may give advice and assistance privately to pupils who are carrying on extra projects, the first duty of this instructor is to the particular groups of projects published for any given year.

(3) **Published year groups.**—In short, upon the particular project groups published for treatment in any given year the attention of both pupils and instructors should be concentrated.

5. PROJECT STUDY AND CAPACITY OF PUPILS.

(1) **Individual v. Class.**—Careful planning of the project study will be necessary on the part of each instructor. The project method of education more, it is believed, than all others takes into account the aptitudes, requirements, and accomplishments of indvidual pupils as these are revealed from hour to hour.

(2) **Varying capacity.**—Acquaintance with pupils who enroll for vocational agricultural education reveals wide variation among them in capacity for project study. Since farm results under the project method must be obtained, not directly by the instructor, but indirectly through the individual pupils, the instructor's plan should provide for at least an essential minimum of accomplishment on the part of the least capable, for a desirable maximum on the part of the most capable, and for a large body of educational values to be grasped by the greatest number, pupils who are neither the least nor the most capable.

6. KINDS OF PROJECT KNOWLEDGE.

There may be distinguished three phases of instruction in agricultural projects, suited pretty exactly in their varying scope and degrees of difficulty, to the three fairly distinct kinds or grades of capacity found among the agricultural pupils. An analysis of project knowledge which shows these three sorts or gradations will be of direct assistance to the instructor in formulating his project-study program.

(1) **Rules,** or plans and specifications, however simple in outline and whether on paper or in the mind, are necessary for the intelligent execution of any piece of productive work.

A boy may become a more or less capable farm hand without knowledge in advance of the enterprise, as a whole, upon which he enters. An ordinary laborer is capable of taking orders and of doing routine farm work. Project work under capable supervision should produce a skillful farm hand, but one who desired hand training only should hire out to a progressive farmer.

Project study, the other fundamental of the project method, should produce managerial ability. Good headwork is required for successful farming no less than good handwork. Project study in the case of even the least capable boy admitted to this training should result in evidence of mental accomplishment. A good form of such evidence is a record on paper of the rules by which that boy proposes to be, or has been, governed in the execution of his productive enterprises. Inability or disinclination on the part of any pupil to find or formulate such rules is evidence of his present mental or moral unfitness for this type of training.

Mastery, in short, of the simplest rules by which the success of his productive work must be determined should be looked upon as an essential minimum of accomplishment on the part of the least capable boy who is permitted to remain in the class.

(2) **Reasoning.**—Beyond the precise rules necessary for success in any given project there is the reasoning from experience or from scientific principles, which is their justification. Most of the members of a class readily penetrate to this reasoning; or, at the hands of a capable instructor, are penetrated by it.

The larger educational efforts of the instructor should be directed toward training his boys, not merely in finding the naked rules by which their project work must be governed, but also in discovering the practical experience or the laws of nature which lie back of them; that is to say, he should aim to possess his pupils of rules, not as "rules of thumb," but as rules of reason.

Good farm management depends upon good judgment, upon reasoning power—not on ability to find good rules so much as on ability to make them. In the notebooks of most of the boys, therefore, there should be recorded the general principles which they have mastered and of which their rules have been but particular applications.

(3) **Broader results.**—The third kind of project knowledge may consist of informational materials of many sorts—statistical, commercial, geographical, historical, scientific, social, and the like.

Such knowledge can not be looked upon as a direct tool for carrying out a project. It may directly supply neither a rule nor a reason. It may, nevertheless, consist of many most interesting discoveries, offer much most excellent educational experience, and be of such a nature as to give the young producer what may be termed, in the broader senses of that expression, agricultural horizon.

Such knowledge falls readily within the grasp of the most capable pupil, and may well be considered for him a most desirable maximum of project knowledge.

(4) **Typical for all projects.**—These three kinds of project knowledge are typical for all vocational agricultural projects and years. Of the three, the first and second are in the strictest sense vocational; the third has obvious vocational relations, but may be largely cultural.

(5) **The three R's of the project method.**—It may not be altogether amiss to declare at this point in express terms that in these divisions of project knowledge, "Rules," "Reasoning," and "Broader results," we have the three fundamentals—the three R's—of agricultural study by the project method.

7. PROJECT STUDY RECORDS.

(1) **Of highest importance.**—In view of the above discussion, the project study records of the pupils become of the highest importance. In them we may expect to find the results of the instructor's best efforts as both program maker and teacher.

(2) **A supposed project.**—The groups of projects published for the school year ending in 1914 include kitchen gardening. A constituent of kitchen gardening is vegetable growing. Suppose that the boy's main project is providing all, or a part, of the home vegetable supply. Suppose a subproject to be the production of lettuce. Suppose, finally, that we consider the knowledge related to this subproject to have been assembled in a notebook.[1]

(3) **A supposed notebook.**—The aims of the different divisions of the project study may then be represented graphically by the following diagram (fig. 3) of such a possible notebook. The dotted vertical line indicates the binding of two notebook pages which lie open and are ruled as if a single broad sheet. Notebooks so ruled are now in successful use. The diagram is not drawn to scale. The subject matter below the headings is explanatory of the several kinds of knowledge the pupil would find and record.

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[1] Notebooks should, of course, be kept by every pupil; or, if not kept in notebooks, the record of his findings from his project study should be kept by the pupil on cards, filed back of tab cards bearing appropriate project titles. The agent of the board of education for agricultural education assists Massachusetts instructors in the use of the card method, if this is preferred and his help is desired.

8. APPORTIONMENT OF PROJECT STUDY, TIME, AND MATERIALS.

(1) **Diagram column widths.**—The relative widths of the above columns may be considered indications of an approved apportionment of time among the three kinds of subject matter for the most capable pupil. The first column represents the least requirement any pupil should be expected to meet in order to justify his retention in the class. The first and second columns represent requirements most of the pupils should be expected to meet.

14 (page)	**Project: Kitchen gardening.** Subproject: Lettuce crop.	(page) 15
1 **Rules.** Namely, the Precise Plans and Specifications made for this Project.	2 **Reasoning.** Namely, Evidence from Science, Observation, and Experience that this Project as planned is thoroughly understood and can be defended.	3 **Broader results.** Derived from More General Observation and Study.
Object: Skill. *Notes should show* The minimum of knowledge of methods, materials, equipment, and operations required for success this year on the land selected for this project. *What to do First Second, etc.*	*Object:* Managerial ability. *Notes should show* Knowledge necessary for planning a successful cropping system for vegetables, a system in which the lettuce crop may have a proper place. Mastery of certain principles of agricultural science which find some of their best illustrations in lettuce growing. Principles applicable to lettuce growing under varied conditions, but particularly under those which promise success with this project the present year. *Why's and Wherefore's.*	*Object:* Outlook. *Notes may show* Acquisition of a more extensive body of knowledge centering around the lettuce plant and crop. History, botanical classification, utilization, and the like. *Knowledge in itself desirable.*

FIG. 3.—Diagram of project study record.

(2) **Faculty cooperation.**—At least three-fourths of the most capable pupil's time should be occupied by the subject matter of columns 1 and 2. Column 3 might well be covered, particularly in the later years of the four-years' course, by special exercises given the most capable pupils by other teachers, such as teachers of botany, chemistry, physics, mathematics, drawing, or English.[1] Close cooperation between these teachers and the agricultural instructor should further this end.

(3) **No pupil "held back."**—In order to direct the project study of his class in the most competent manner, the instructor must of course organize his teaching materials in advance in accordance with two, at least, of the three divisions of knowledge above described. If he

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[1] For a suggestive diagram showing possible correlation of elementary school subjects with school gardening, see the insert sheet, opposite page 294, of "Among school gardens," by M. Louise Greene (Agricultural Project Bibliography. Entry No. 852.)

can provide materials of all three kinds, he will have the satisfaction of knowing that the same amount of time may be devoted by the entire class to study related to such a subproject as lettuce production, and yet that no pupil will be "held back" by any other pupil—a result most devoutly to be desired in all forms of teaching.

(4) **First column, first in fact.**—It should be emphasized, further, that the first concern of the least capable should be equally the first concern of the more or most capable. The movement of project study should begin at column 1. The movement should be from left to right, across the field represented by the foregoing "Project study record" diagram—not, as has too often been the case in the study of agriculture, from right to left.

(5) **High school half days, spring and fall.**—Probably the most difficult school schedule problems will be encountered in the high-school vocational agricultural departments. It will be borne in mind that half the school time during the fall and spring terms is to be spent on agricultural project work and study. It is desirable that this entire allowance, when spent away from home, shall be spent in the room with, or under the direct supervision of, the agricultural instructor.

(6) **More mature and less mature minded.**—Diagrams showing how the less mature-minded group and the more mature may be worked to good advantage during the high-school department strictly agricultural half days follow.[1] (See figs. 4 and 5.)

The younger group is assigned to the agricultural instructor forenoons. Parents of these pupils or their other teachers will be responsible for their afternoons. In these departments, where the entire enrollment should not exceed 20, the pupils may generally be divided into two groups of about equal numbers. Since some of the more mature have already been attending high school, where there is but one session, and have started on morning studies, two of which they may desire to continue, the older pupils have been assigned to the agricultural instructor afternoons.

(7) **Project study versus agricultural survey.**—It will be noticed that most of each half day, and, when occasion demands it, the entire time, is definitely assigned to project work or to study related thereto. The project work will be continued during the summer, with school supervision. The project study will be completed in the fall and spring terms; except that during the summer there will be much reviewing, in field and barn, of facts and principles, some noting of new facts as a basis for the further study of principles, and careful daily-record keeping of the expenses and receipts of the projects conducted.

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[1] These diagrams may be found suggestive in schedule making at separate agricultural schools, where the project study method is followed.

(8) **Class focus.**—The horizontal cleavages set off the first and last periods—periods which have this in common, that for the time being there is in each period some single focus of attention for the entire class. Here the methods are those with which all are familiar in class recitations or discussions.

Periods.[1]	**Forenoon group: First and second year students.**
9.00 to 9.45	**Agricultural survey (elementary):** *About 75 periods.* *Object:* General study of agricultural production and rural life. *Textbook:* "Beginnings in agriculture," by Mann. Put emphasis on soils and plant life portions in year for horticulture; on animal portions in year for animal husbandry. Give much attention to suggested problems. *Omit* this agricultural survey exercise whenever the entire forenoon should be devoted to productive work, or to library, laboratory, or other instruction bearing directly upon that work.
9.45 to 11.15	**Project work or project study:** *About 300 periods.* *Object:* Execution of home or school productive projects undertaken by the individual students, coupled with laboratory, library, and other study and observation directly bearing upon those projects. *Concerted attack* by the entire class on plant projects in even years (1912, 1914, etc.), and on animal projects in odd years (1913, 1915, etc.). *An extra project* in animal husbandry may be undertaken in an even year by special arrangement with the instructor; as, also, one in horticulture in an odd year. *Reference books and bulletins*, including agricultural laboratory manuals, will here be consulted according to the ability and needs of the individual students. *Notebooks*, carefully kept, will set in order the ideas and plans derived from this individual instruction for guidance in carrying out individual projects. *Method:* Minimum of class instruction; maximum of personal individual guidance. The instructor will go from student to student, as does the teacher in shopwork, laboratory, or drawing room.
11.15 to 12.00	**Project work or project study** (*Continued*). **Class discussion of individual projects:** *About 125 periods.* *Object:* To subject individual ideas and plans to the criticism of the entire class, and thus to clarify principles and intensify impressions. *Round-up of opinion:* The value of closing each forenoon with this class discussion grows out of the fact that though each has been working on his particular project, all have been working upon the same sort of project, at the same time: as, for example, lettuce as a kitchen garden crop. A device for making all acquainted with what each is doing, and showing that general rules must often be modified in order to meet local needs. A means for developing the managerial type of mind.

FIG. 4.—Diagram of agricultural project periods for selected high schools in fall and spring terms.

(9) **Individual focus.**—The vertical cleavages of the middle periods may serve both to indicate and to emphasize the individual study of each pupil, the careful and the exclusive attention given to the needs of each pupil by the instructor, the adaptation of general agricultural principles to the peculiar home farm requirements and facilities of each particular boy in the class. Here the methods are those which have their closest parallels in customary school "labo-

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[1] Periods may be of the same length as those of any particular school. Reserve the first for the "Survey," the last for the "Round-up," and the body of morning for individual instruction. Periods on projects in summer will be determined by the work undertaken, and will be covered by daily time sheets.

ratory" instruction, whether in drawing room, shop, library, or science laboratory.

(10) **Prime merit of this apportionment.**—It is one of the most important merits of this project or part-time plan that the instructor is thus able to deal with the particular needs and capacities of individual pupils and at the same time maintain close, efficient, and progressive class organization and control.

Periods.[1]	**Afternoon group: More mature minded students.**
1.00 to 1.45	**Agricultural survey (advanced):** *About 75 periods.* *Object:* General study of agricultural production and rural life. *Textbook:* "Elements of Agriculture," by Warren. Vary emphasis in alternate years to accord with subject matter of project work. View local conditions in light of text. *Omit* this survey exercise whenever the entire afternoon should be spent in project work or in observation or study directly related thereto.
1.45 to 3.15	**Project work or project study:** *About 300 periods.* *Object:* Execution of home or school productive projects, coupled with library, laboratory, and other study and observation directly related to those projects. *Concerted attack* by the whole class upon animal projects in even years (1914, 1916, etc.) and on plant projects in odd years (1915, 1917, etc.). *An extra project* in horticulture may be carried out by special arrangement with the instructor, in an even year; or, in animal husbandry, in an odd year. *Reference books and bulletins*, including agricultural laboratory manuals, will here be consulted, according to the ability and needs of the individual students. *Notebooks* will be carefully kept, for setting in order the ideas and plans derived from this individual instruction for guidance in executing the projects undertaken for profit by the individual students. *Method:* Same as in forenoon for first and second year students.
3.15 to 4.00	**Project work or project study** (*Continued*). **Class discussion of individual projects:** *About 125 periods.* *Same purposes* to be served here as in corresponding period for less mature group. (See last period of forenoon.)

Fig. 5.—Diagram of agricultural project periods for selected high schools—Concluded.

9. VEGETABLE-GROWING PROJECT STUDY.

We have seen that vegetable growing is among the projects assigned for first or second year study. The pupil brought up on a farm is likely to bring to the classroom considerable familiarity with several kinds and varieties of vegetables. It remains for his agricultural instructor to amplify his knowledge and experience to the fullest possible extent.

Chapter III gives suggestive outlines for vegetable growing, together with a brief preliminary discussion of various possible classifications of vegetables and a list of vegetables successfully grown in Massachusetts home gardens. It is therein stated that probably it will be feasible in most cases for the pupils to undertake to grow 11 varieties, illustrative of the 11 groups of vegetables which may be distinguished from the very practical point of view of their methods of cultivation.

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[1] See footnote on preceding page as to length of periods and number of summer periods. Same rules to apply to more mature as to less mature students.

The requirements and tastes of most families will probably make it easy to secure the consent of parents to the growing of this number of varieties in sufficient quantity for the home supply. In addition each pupil should be encouraged to grow at least one variety on such a scale as to provide a surplus for sale as a cash crop.

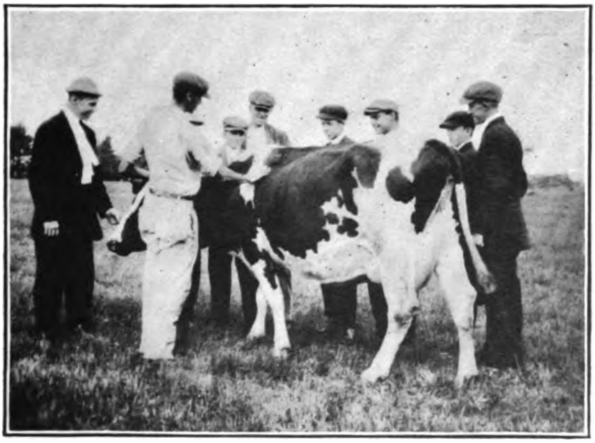
<table>
<tr><td>First period.</td><td colspan="8">Agricultural survey:
Single focus of attention for the entire class, viz, the common textbook subject or problem assigned the previous day.</td></tr>
<tr><td rowspan="3">Middle periods.</td><td>Boy A</td><td>Boy B</td><td>Boy C</td><td>Boy D</td><td>Etc.</td><td>Etc.</td><td colspan="2">Etc.</td></tr>
<tr><td colspan="8">INDIVIDUAL AGRICULTURAL PROJECTS.</td></tr>
<tr><td>Each boy studying his own projects one by one, with the instructor's aid.</td><td>All the boys, however, may, for example, be working out their lettuce problems at the same time.</td><td>Therefore each may be able to make contributions of value to the whole class.</td><td>For this reason the final period of the half day is reserved for a "round-up."</td><td>The instructor will pass from boy to boy during these middle periods.</td><td>Two or three boys may work together on a laboratory experiment.</td><td>Eight or ten boys are enough for a single group.</td><td></td></tr>
<tr><td>Last period.</td><td colspan="8">Round-up of ideas derived from the individual study of the middle periods.
Again, a single focus of attention.</td></tr>
</table>

Fig. 6.—Another diagram of the agricultural half day.

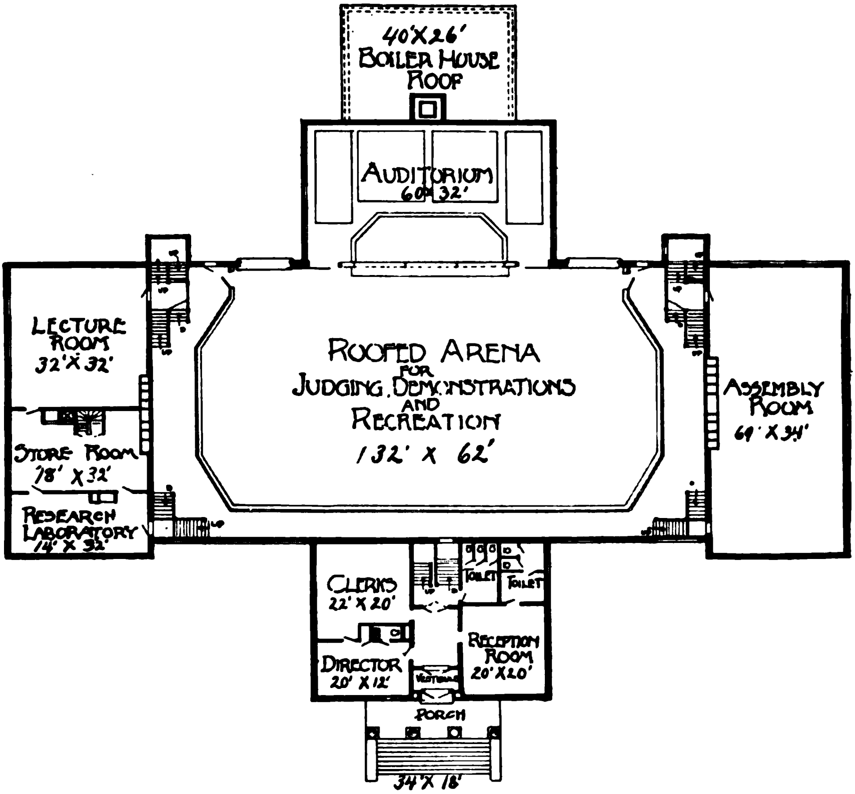
The pupil may be helped at will in the actual work of his vegetable growing by members of his family, by exchanging work with fellow pupils, or by hired labor. It is essential, however, that he himself, with, of course, the aid of his agricultural instructor, shall plan his project and manage it; shall be taught and shall attain proficiency in every phase of the actual work of his productive enterprise; and finally shall render an accurate account of all expenditures and receipts in connection with his undertaking.

In vocational training the economic aspects of the projects carried out by pupils are of the utmost importance both as to manipulative skill and as to sagacity in management. Work, use of teams and tools and such materials as stable manure, for which cash is not paid, should therefore be charged at fair valuations against the projects; and all products, whether furnished the family, given away, or sold, should be credited to the projects at current retail prices. The suggestive outlines in Chapter III include questions on the economic elements of project study.

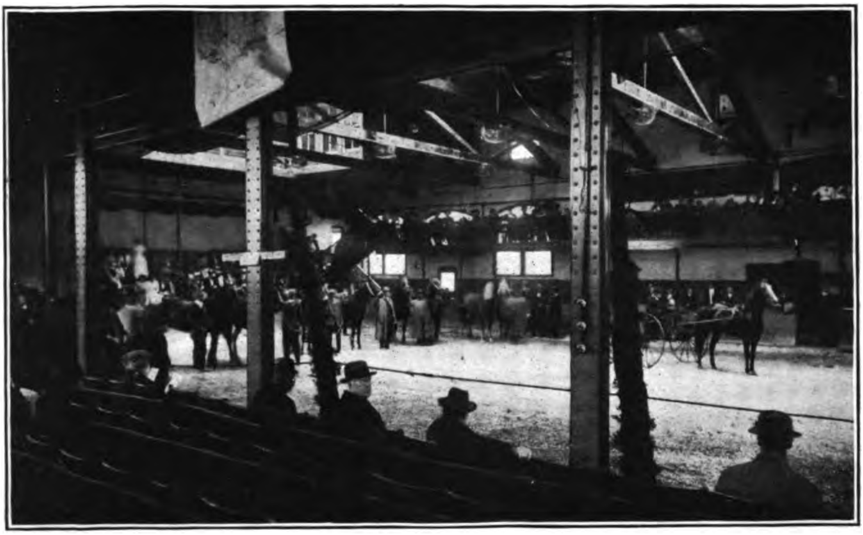
A. HADLEY BOYS HELPING EACH OTHER AT CORN HARVEST.



B. COACHING HADLEY STOCK-JUDGING TEAMS.



A. PLAN OF BUILDING AT SMITH'S AGRICULTURAL SCHOOL, NORTHAMPTON, MASS.



B. ARENA AND AUDITORIUM, SMITH'S AGRICULTURAL SCHOOL, NORTHAMPTON, MASS.

10. SMALL-FRUIT-GROWING PROJECT STUDY.

The best home gardens are seldom considered complete without an abundant supply of small fruits, such as blackberries, raspberries, gooseberries, currants, and strawberries. Grapes also are sometimes included. The small fruits are often found in the same inclosure with the garden vegetables. When we add that the garden is generally most convenient if located near the house, and that all of these small fruits, save strawberries, are tall or moderately high growing, we have said about all about them that can be said in general for assistance in garden planning.

Farm boys are more or less familiar with the above facts. Following, therefore, the making of the preliminary garden sketch, which should show intention of growing one or more small fruits, the small-fruit project study will best deal with individual varieties and be guided by outlines like those suggested for varieties of vegetables.

11. BEEKEEPING PROJECT STUDY.

Beekeeping is an interesting and profitable side line in well-balanced farming. It is particularly important where any considerable attention is given to fruit and vegetable growing. It is therefore a worthy project for first or second year pupils.

Every agricultural pupil should be taught the importance of bees in their relations to economic plants, and their nature and possibilities as economic animals. So much knowledge will be included in the general study of agriculture by both the younger and the older pupils during the periods set apart in the foregoing diagrams, figs. 4 and 5, under the designation "Agricultural survey."

Every vocational agricultural school and department should own, work with, or have access to at least one hive of bees. Undoubtedly certain pupils will desire to conduct beekeeping projects. Project study outlines should be prepared for them, and should cover at least two of the three kinds of project knowledge before discussed.

Since pupils are not to be required to conduct projects in every field covered by the published course of training, beekeeping may be looked upon as one kind of project from which, at their desire or at the discretion of the instructor, pupils may be held exempt.

12. POULTRY-KEEPING PROJECT STUDY.

The study of poultry keeping has been pretty fully discussed as to ways and means, and its desirability and feasibility have been set forth with considerable detail in a previous report.[1] It may safely be urged that every pupil should be permitted, and even required, to conduct a poultry project.

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[1] Board of Education (Mass.), seventy-fourth annual report, for 1909-10, pp. 236-240; also "National Society for the Study of Education," eleventh yearbook, Pt. II, pp. 38-40.

Project study outlines of the sort suggested for vegetable growing will be just as necessary here as elsewhere for the proper guidance of the poultry project pupils.

13. SHEEP AND GOAT HUSBANDRY PROJECT STUDY.

Sheep and goats in some localities are objects of keen interest and economic importance; in other localities they are not.

As to general knowledge and possible exemptions, what was said of beekeeping should apply equally here. Projects should be permitted when strongly desired; and, when permitted, properly guided by appropriate project study outlines; they should not be required.

14. SWINE HUSBANDRY PROJECT STUDY.

Swine husbandry should, probably, in most cases be ranked as nearly equal in importance to poultry keeping—perhaps midway as school projects between poultry keeping and beekeeping. Projects in this field should be optional with the individual pupils. Some knowledge of swine husbandry will be had through the agricultural survey study and its attendant trips for observation.

Where the home farm conditions are at all favorable, swine projects should be urged and outlines for their proper study provided.

15. ORNAMENTAL PLANTING PROJECT STUDY.

Few good farmers are entirely heedless of the attractive appearance of their farm property as farm homes. Some attention should be given by every agricultural pupil to such ornamental planting as is appropriate under reasonably thrifty farm-home conditions. During at least one year of his course, along with his utility projects, every boy should carry a project devoted to the beautifying, in at least some slight measure, his home surroundings.[1]

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[1] List of ornamental plants successfully used at Smith's Agricultural School, Northampton, Mass.:

Annuals.

Marigolds (African).
Marigolds (French).
Zinnias.
Nasturtiums.
Calliopsis.
Candytuft.
Salpiglossis.
Centaurea.
Eschscholtzia (California poppy).
Mignonette.
Asters (Semple's branching).
Portulaca.
Nicotiana.

Shrubs.

Berberis Thunbergii, Japanese barberry.
Cornus Siberica, Red-twigged dogwood.
Forsythia suspensa, Yellow bells.
Ligustrum Regelanum, Regel's privet.
Lonicera Morrowi, Morrow's honeysuckle.
Lonicera tartarica, Tartarian honeysuckle.
Philadelphus coronarius, Syringa.
Pyrus Japonica, Japanese quince.
Rhus typhina, Staghorn sumach.
Rhus glabra, Smooth sumach.
Ribes aureum, Yellow currant.
Rosa rugosa, Japanese rose.
Sambucus Canadensis, Elderberry.
Spirea Von Houtei.
Spirea *Thunbergii.*
Spirea *callosa.*
Physocarpus opulifolius, Ninebark.
Syringa vulgaris, Lilac.
Viburnum opulus, High-bush cranberry.
Aralia spinosa, Hercules club.

[Footnote continued on next page.]

Some study will have been given farm-home attractiveness during the periods devoted to the "agricultural survey." Good home project work, however, will be as dependent here as elsewhere upon project study outlines carefully adapted to each pupil's home conditions.

16. THIRD-YEAR AND FOURTH-YEAR PROJECT STUDY.

The project study method is identical for all years. When, therefore, pupils now beginning vocational agricultural training have progressed so far in the course as to be prepared for it, third-year and fourth-year project study should be provided for in the manner above indicated. Project study outlines for fruit growing, including orcharding, should be drawn; outlines, also, for the handling of certain vegetables from the market gardener's point of view, and for dealing with the serious problems of dairying.

Every advantage in this outline making should be taken of the opportunities thus afforded for the thorough reviewing of the basal principles of plant production and animal management already dealt with in the project instruction of the two previous years. This reviewing should insure a consistent and closely knit body of knowledge supported by the practical applications of that knowledge. It should, also, make it possible for an older boy who has had good farm experience to enter the course to advantage at the beginning of the third or even of the fourth year.

The field of study one year here, as earlier in the course, should be restricted to and concentrated upon plant projects, and the other year centered upon animal projects.

[Continuation of footnote from preceding page.]

For cuttings.

Hardwood:
- Spirea Von Houtei.
- Spirea *Thunbergii.*
- *Syringa vulgaris*, Lilac.
- Privets.
- Forsythia.
- *Philadelphus coronarius*, Syringa or Mock orange.
- *Rhus typhina*, and *glabra.*

Green:
- Geraniums.
- Salvia.
- Rex begonias, for leaf cuttings.
- Cannas, tuber cuttings.

Herbs.

Dill, Thyme, Lavender, etc.

Vines.

Cinnamon, Virginia Creeper, *Ampelopsis tricuspida.*

Bulbs.

Indoor forcing and outdoor use:
- Narcissus.
- Tulip.
- Hyacinth.

Miss S. M. Weed, instructor in ornamental planting at the Northampton School since 1908, makes the following observations regarding the above lists:

"Any of the flowering plants listed are easily grown at home. Choice and range of plants for home gardening depends entirely upon the resources of individual pupils—amount of land available, location, nature of soil, etc. An assortment of from 6 to 10 varieties is about the number most profitably cared for by the majority, but, as I have stated, this number varies greatly.

"As an incentive to home work might be mentioned starting plants at school, to be taken home for use later. Asters, cosmos, and pansies are good plants to use in this way. It is also an advantage to have on hand seeds of standard quality and kind which pupils may buy from the school, thus insuring the use of good seed."

The method of procedure is believed to have been elucidated with sufficient clearness in the foregoing discussion and in chapter III, containing suggestive project study outlines for vegetable growing, so that its application to third-year and fourth-year project study need not at this point be further elaborated.

17. PROJECT STUDY VERSUS SUBJECT STUDY.

Critics familiar with the curricula and methods of teaching common to most public schools of secondary grade have remarked a radical difference of method between subject teaching and teaching by projects. Fear has occasionally been expressed that the project innovation in educational methods may, apart from the skill it gives, result in putting the pupil in possession of merely a more or less incoherent collection of knowledge fragments.

(1) Subject study.—*A. Organized knowledge.*—Subject study, it is urged, puts the pupil in possession of coherent bodies of organized knowledge. Subject study, moreover, it is pointed out, so far, at least, as it is of the more modern type, takes into account the environment of the pupil; and the practical bearings of his education, so far as it has any, are thus made plain to his understanding. Subject study stops short at this point. For applied knowledge as such it recognizes no responsibility.

B. Deferred values.—Having been schooled in terminology and principles, also in orderly and efficient habits of reasoning, and having been led to make certain laboratory and other observations as to the applications of principles in the work-a-day world, the pupil must then be trusted to develop efficiency on his own account in one or another field of applied knowledge. The principal values properly to be expected from subject study, therefore, have been termed "deferred values."

C. Agriculture and subject study.—Agriculture has generally been taught by the subject method.[1] A part of the farm boy's year, usually the summer, has been spent on his home farm; another part of the year, usually the winter, or the months of the customary school year, has been spent, in most cases at a considerable distance from his home farm, at the agricultural school or college. In the former, his attention has been devoted to productive agricul-

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[1] Following is the list of subjects found in the undergraduate course of training prescribed for prospective teachers of agriculture by one of the most prominent agricultural colleges. With the subjects are given the hours required for each. The significance of this list is found in the tendency for beginners in teaching to be imitative, to try to teach by the very same methods by which they themselves have been taught.

Agronomy	21	Thermatology	2½	English	4
Animal husbandry	16½	Botany	6	Rhetoric	9
Dairy husbandry	8	Chemistry	15	Economics	2
Horticulture	15½	Entomology	2½	Education	8
Secondary school agriculture	6	Zoology	5	Library science	2

ture; in the latter, to agriculture as more or less divided bodies of organized knowledge.

D. The unaided farm boy.—To the farm boy himself, alone and unaided by the supervision of his agricultural instructors, has been left the educational task, well-nigh impossible, under such circumstances, of bringing these elements of his experience—one concrete, the other abstract—into efficient relations, whether for purposes of intelligent understanding or for purposes of economic returns, with the result that the anticipated values of such subject study have too often been deferred indefinitely.

E. Education in forgetting.—Judging from the experience of many pupils, and among the number not a few who have gone on to college, much secondary education by the subject method might justly enough be called "education in forgetting." In fact, it has sometimes been argued that the educational process, as a process, as a means of developing mental alertness, acuteness, and power, is the main concern of the subject-study method; that the forgetting is to be expected, is not to be too much deplored.

The structure and habits of the human mind and brain are such that, following the psychological laws of segmentation, unused knowledge tends to be "forgotten." Much, a vast deal, of the subject matter turned over and otherwise dealt with by the subject-study method is of such a nature that in out-of-school hours and in after-school years it remains unused. To the extent that it remains unused, its forgetting, save by minds supported by the most unusual brain substance, is inevitable. Whether to be deplored, therefore, or not, it has over and over again been observed that examinations once passed and the school year ended subjects are forgotten.

F. Subject-study merits.—For the training of the so-called "abstract-minded" boy, of the boy naturally gifted with a retentive cerebral organism, and of the boy who is to follow a professional as distinguished from a productive career, the subject-study method must be conceded appreciable merits; and these merits become the more pronounced and permanent in proportion as the method, in its dealing with materials and principles, is strongly inductive.

(2) **Project study.**—*A. Accompanied by subject study.*—Merits conceded subject study, however, are not to be subtracted from the total merits of vocational education. The training of the boy who desires a vocational agricultural diploma includes, as we have seen, the subject study of English, history, civics, botany, chemistry, and general agricultural subjects, such as soils, tillage, and crop rotation. That this subject study does not precede but accompanies or follows the boy's project study directly and decidedly enhances its value.

B. Organization of common sense.—a. Induction and application.—But project study has merits peculiarly its own. No more diligent or effective application of the inductive method in education has ever been witnessed than that proposed, and in good measure already practiced, by the project study of agriculture. The educational cycle is not left open, but is here completed. The movement, from observed data of agricultural production to general laws and principles, is followed by the reverse movement, which is embodied in the application of the laws and principles of science—embodied, that is to say, in economic agricultural enterprises conducted by the pupils on their home farms under competent school supervision.

b. Personal economic interest at stake.—Mr. Huxley's favorite definition of science is understood to have been "organized common sense." The project-study method consists not so much of the conning of "science" already organized and brought to the boys in books as it consists of the actual organization anew of the common sense required for successfully controlling the personal affairs and economic fortunes of the pupils themselves. The "career motive" is here dominant, inspiring, compelling. Upon the organization of common sense is put a strong, personal premium.

c. Natural *versus* artificial units.—The units of project study are not the units of another man's career nor of another man's book. They may, nevertheless, consist of findings from many sources, including picked careers and selected books.

Olericulture may be made a subject study; so, also, may chemistry. Rarely, however, does the subject study of chemistry, for example, include all of chemistry. The limits set are arbitrary.

The lettuce crop to be produced by the pupil in a given year is a project-study unit. As such it requires mastery of certain portions of both olericulture and chemistry. The requirements for producing the crop under the known home conditions mark the limits of this unit. These limits are not artificial; they are natural. The kinds of knowledge to be gained have been indicated above by the suggested contents of the boy's project-study record. The boy's knowledge may be complete for its purpose—an organized unit, a body well articulated and thoroughly comprehended.

The project method deals with natural units. By this method the boy's common sense is focused, clarified, and put directly to important economic tests.

d. Project-study units and pure science data.—Project study, moreover, will probably prove to be one of the most effective means of accumulating first-hand data for the successful study of science as science. The lettuce plant, for example, thrives best in almost any garden soil when fed freely one particular kind of plant food, namely, nitrogen. The pupil must therefore know this raw material of chemistry, not at the outset in its every form and use, but in the special form best suited to the needs of the lettuce plant. He may learn to think and speak of it by the symbol the chemist has assigned it. That symbol will then have been learned once for all. Later, in other project study, he will learn more about nitrogen in its relations to productive agriculture. One by one, if wisely taught, he will similarly come to know other elements of plant or animal food, together with their symbols. He will come to know them in an intimate, personal way, by name and symbol, by appearance and action. All this will surely be gain, and not loss, if later the boy has opportunity for studying these chemicals in their more general relations.

e. Education in remembering.—The knowledge which is the boy's quest in project study is knowledge of which he sees the need. Being needed year by year, it will year by year be recalled. Used again and again, added to, modified, and exactly applied, it will tend to be distinctly remembered.

If unused knowledge tends to be forgotten, the converse is most emphatically true. Used knowledge tends to be remembered. The primary pursuit of project study as the accompaniment of project work is the organization of definite and coherent bodies of knowledge which the recurrent seasons will naturally and of necessity call into use. Forgetting here is a hindrance. If it occurs, it is not a virtue but a fault.

In short, the organization of common sense by the project-study method is not education in forgetting; it is education in remembering.

f. Traditions of success versus traditions of defeat.—Educators and public-spirited people in general are gravely concerned over the yearly exodus from school of the army of children whose schooling is halted as soon as the compulsory-education laws release them. But why should they not go out?

In a vast proportion of cases their lot in school has been far from happy. The "bookish" boy has been, and may always be, the exception and not the rule. Taught by one sort or another of subject-study method, and failing to see, much less to feel, direct relationship between what they have studied and what they are likely to be and do in life, too many have "failed in their studies." Their school traditions have been traditions of defeat.

If anything can efface the depressing memory of such traditions, by establishing traditions of school success, it is believed that the project method of vocational education can do it. And probably no field for this is more favorable than that of agriculture.

Boys, especially farm boys, like the open. They are curious about plants and animals. They readily come to know them. They like to possess them. When school begins in the open and ends there; when in the schoolroom are found undreamed-of guide books to more wonderful and intimate understanding of the already familiar objects of the open; most of all, when the school teacher meets the boy where his interest is keenest, and shows him how to turn his possessions, or those of his father, to better economic account—then schooling becomes a new experience to the boy. It becomes part of his life, not something apart from it. Traditions of success in school become possible of attainment. They become for the majority inevitable. Than this, project study can, perhaps, hope to achieve no finer result.

18. PROJECT STUDY PERSPECTIVE.

Looking back, now, over the project and part-time plan of vocational agricultural education, as analyzed and expounded in the report on "Agricultural Education" of the board of education to the Massachusetts Legislature of 1911, and in the present discussion, two facts should stand out in clear relief. Certain kinds of projects are elective; others are prescribed. Each of these two sorts of projects reveals the relative proportions and importance of the other.

(1) "Improvement" and "experimental" projects desirable.—The projects termed "improvement" and "experimental" offer excellent incentives to project work and to project study.

The first may contribute most toward the training as a whole by being confined to projects which appeal to, and tend to develop, the pupil's sense of attractiveness, order, and fitness, in farm-home appointments and surroundings. These will touch his pride.

The second may make its best contribution by appealing to, and nurturing, the element of daring—the tendency of youth, even at some personal risk, to get out of ruts. Appropriate projects for the second are to be found by following the best leadership in animal and plant feeding, in plant and animal breeding, in selection of plant and animal foundation stock in the light of comparative records of production, and the like. Such projects will arouse his courage.

Both will have pronounced values as elements of vocational agricultural education, for both will be directly aimed toward a more favorable farm inventory and toward considerably increased farm profits. Both, moreover, may be made to contribute as much to community as to private betterment and well-being.

(2) "Productive" projects fundamental.—First and without fail, however, in vocational education should come the projects termed "productive."

The scale of the improvement and experimental projects may be modest. The scale of the productive projects must be extended, occupy as much as possible of the time and engage as much as possible of the energy of the pupil. Entering upon a productive project should be an indication of the pupil's determination to go just as far as he can in any given year, not only toward learning how to become a self-respecting and self-supporting producer of farm products, but also toward putting that knowledge into practice.

Vocational agricultural education, in short, means, if it means anything, the constant interworking of ideas and action. It means the educational unity of two practically simultaneous processes, the processes of *earning* and *learning*.

The logic of making the productive projects fundamental is the logic of life. First, man must provide his subsistence; next, a surplus for barter, sale or other use. Then out of his surplus he may rightfully take risks, or make nonproductive investments of time or capital. And this holds true no matter how slight the risk, nor how modest the nonproductive outlay.

Happily, projects primarily productive, involving, as they must do, considerations of quality no less than those of quantity, are not without vital elements of training in attractiveness, order, and fitness. Moreover, the boy's success in his enterprises aimed at profit is more than likely to be directly proportionate to his daring enlistment under the leadership of the newer agriculture. Productive projects alone, therefore, may contribute to the education of the pupil something of those elements which are the more direct aims of projects termed "experimental" and "improvement."

The agricultural instructor, in laying out or in approving projects to be undertaken by his pupils, will, therefore, make no mistake. His primary concern must be vocational agricultural education, through productive projects. Productive projects may, in any given year, and at a pinch in all years, be taught to the exclusion of all others. "Improvement" and "experimental" projects, where found feasible, are desirable. "Productive" projects are fundamental.

19. SUGGESTIONS FOR THE AGRICULTURAL INSTRUCTOR.[1]

(1) **Projects.**—Suit the size of the project to the capacity of the pupil. Then require good work.

A. Not too small.—Speed up the boy's work by making his project big enough to require attack and dispatch for its competent execution. Make it so big as to avoid all tendency toward habits of dawdling and pottering. Let it be big enough to arouse his enthusiasm by making the profit he may reasonably expect to get appeal to him as being a real prize. Make the project big enough so that a competing job shall not get the boy away from school. In short, let each boy's project be such that it shall serve, not an avocational but a vocational end of commanding importance.

B. Not too big.—At the same time do not permit a boy to undertake more than he can carry out in a thoroughly workmanlike manner.

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[1] These suggestions were, of course, addressed directly to the vocational agricultural instructors in Massachusetts. It may be remarked that these men are showing excellent ability in putting them into effect.

If slow work is likely to be finical, fussy, and uneconomic, slovenly work is discreditable. Good habits of work should be formed and bad habits either avoided or sharply corrected. Projects just within the grasp of the boy may be, and should be required to be, capably carried out.

(2) **Project clothes.**—Require that all project work shall be done in working clothes. Provide lockers for the ordinary school clothes and shoes, and require a change of dress when project work is to be done on the school premises. Provide, also, conveniences for cleaning up after the work is done.

This should be looked upon as a perfectly reasonable rule the nonenforcement of which would be absurd and must make the project work appear ridiculous.

Require, also, that jumpers and overalls shall be regularly laundered and decently kept.

(3) **Project records.** *A. Work records.*—Require exact records of work done; also, of all other items of outlay and income. Require that these records shall be made on the form approved by the board of education, and that the daily detachable sheet shall be handed in at the first school session following the day when the work is done, or any other items recorded.

Preserve these daily records for such inspection as may be made, or for such summarized reports as may be required, by the agent of the board for vocational agricultural education.

B. Study records.—Require evidence of project study in notebooks kept by the pupils. The form of notebook suggested above has the merit of keeping steadily before the eyes of the pupil the kinds of project knowledge with which he is dealing and their relations.

Another form of notebook may be found more useful to the instructor and about equally good for the pupil. This form, also, is now in successful use. The right-hand page in this case is reserved for materials found by guidance of the second column of the project-study outline. The left-hand page is divided into two about equal columns. Of these, the first is used for the working rules, or plans and specifications of the pupil; the second, for the authorities consulted, whether in print or in person. When the instructor desires to assign a pupil new references, he finds it very convenient to be able to review at a glance, in the column specially reserved for them, the authorities already consulted.

The particular form of notebook, however, is but a means. The desired end is clear evidence of sound thinking. The pupil, in some form of notebook, should be required to reduce his approved agricultural ideas to writing, because this will be one of the best forms of evidence that his training is placing such ideas at his command.

The agent of the board will desire to inspect these project-study records of the agricultural pupils; but, quite apart from their value as evidence for State aid, these records should be kept with such care as to be of permanent value to the pupils themselves in their future unsupervised farming projects.

C. Photographic records.—Use a camera. Records by photographs are convenient. They may be readily filed and compared. For printed reports or public exhibitions they are interesting evidence of work done; and as evidence of equipment, methods, and results they are, when taken by the supervising instructor, both illuminating and convincing. The eye of the camera is faithful. Credit is given where credit is due. The eye of the camera is also inexorable—it neither condones nor forgives.

Home surroundings, for example, may in one respect or another be bad, yet the instructor's photograph may be the first vivid means of showing the boy his home as others see it—his home as it is. On the photograph, or by its aid, the boy may select modest projects for improvement which are to be carried out within the first year; others, within the succeeding years of his school course. Later photographs will show that he has done what he planned to do toward making his home what, at his hands—considering the boy's age, strength, and resources—his home ought to be.

In many neighborhoods the best types of live stock, for another example, can only be shown the pupil by aid of illustrations in farm papers or in books. It will add not a little of interest and value to the instruction of the pupil if, in addition to comparing, for example, the boy's best cow with the highest record queen of her breed and type, as shown in a book or paper, a photograph of his cow taken from the same point of view as that of the illustration be placed side by side for comparison with that of the queen. The boy may thus be made to see the more vividly what to work toward in his future buying or breeding. Photographs of farm products of unusual excellence may endure long after the products themselves have been sold or consumed, and may afford the only means of comparing the form and appearance of products one year with those of earlier or later years. For educational purposes such photographs add vastly to the value of records dealing with types, yields, and comparative results in farm production.

The architect uses a camera for record of the ground on which, and of the surroundings among which, his proposed building is to be placed. The landscape architect uses a camera in order that he may the more effectively work from existing grades, contours, and planting to the final grouping of trees and shrubs, contours and grades which his design will establish. Even in athletics the crew and football coaches find the camera a faultfinder and a praise-bestower more convincing on one hand, and more inspiring on the other, than their strongest words. The traveler records now in photographs more often than in journals the things he has seen and done. Camera records are widely valued.

If the camera may be an inexorable revealer of agricultural faults, it is evident that it may also be made a faithful revealer of agricultural virtues. In short, a camera, used in connection with each boy's instruction from the beginning to the end of each boy's course, must be looked upon by the sympathetic instructor as one of his most important aids, not merely in faithfully recording the home progress of his pupils, but also for inspiring and sustaining the highest order of project work and project study.

D. Certification records.—Keep a record of each pupil, showing your opinion as to his capacity for planning farm work and his skill in farm operations. Keep the kind of record which would enable you to recommend a boy for a particular job, if he were to leave school before graduation; or for a more responsible job, if he were to complete the full course.

Make a list of the things the most capable boy may be trained to do in matters of farm routine. Then test each boy from time to time, and check to his credit those items on your list for which he shows you that he should receive credit. Include such items as ability to harness a gentle horse, to harness a horse that is notional if not exactly vicious, to harness a pair of horses, and for various purposes; to plow, to cultivate, to mow by hand and by machine, to milk, to cleanse and sterilize utensils, to keep down the numbers of bacteria in milk by care of stable, cows, and his own person and clothing; to prune and to spray; to size, to pack, to store, or to sell fruit and vegetables. Include items as to his habits, such as whether or not he rises early without calling, or promptly when called, is regular, punctual, and reliable in doing chores, is a willing worker, and the like.

Make your certification records progressive. Let them center around the groups of projects published for given years, and advance year by year from group to group. By the end of each boy's course you will thus know from your own observation what each pupil is capable of doing.

Finally, as your knowledge of each boy grows, reduce your record to writing. Put it in a form which may become part of the permanent records of your agricultural school or department. Such a permanent, intelligent, and clear-cut record is due both instructor and pupil.

E. Project bookkeeping.—Require that an accurate account shall be kept of every item of outgo and income, including proper charges for the boy's own labor in connection with every project undertaken by a pupil (see above, pp. 32, 42). Set a proper example by keeping a corresponding account of the productive operations conducted by your school or department.

Require entries to be promptly made, so that at a moment's notice a daily balance, a weekly balance, or a balance from the beginning of any given project may be struck. The project "Daily Report" blanks before mentioned may be made to serve as a "day book," from which the balanced accounts may be made up.

Check these accounts for accurate figuring. Drill may be given by requiring each boy to refigure and check up the accounts of his classmates. Even the drill in mathematics will thus be dealing with going productive enterprises, which, in the end, must show an even balance between expenditures and receipts, a profit or a loss.

(4) **Project outlines.** *A. Ask questions.*—Support, guide, and check the project work of your pupils by appropriate and directly pertinent project study. In organizing your teaching materials, whether found in books, in laboratory experiments or other tests, or in things seen and done outside the classroom, adopt the question method. Avoid to the fullest extent, however, leading questions, questions which suggest an answer " yes" or "no." Ask questions which require study, thinking, and perfectly explicit written or oral replies. Ask questions to which most of the boys ought to find answers. Include now and then a question for your most capable pupil. Begin with questions vital to the success of the projects in hand.

B. Cover the needs of every boy.—By making the outline of questions full enough to cover the project needs of every boy in the class, certain questions may be marked, and others omitted, for individual pupils. A single outline will thus serve the entire class.

Be sure that each boy's project-study record is correct on all points necessary to the success of his particular project. Your questions will thus insure clear thinking, accurate statement, and properly planned work.

C. Make outline overlap outline.—Things frequently and distinctly recalled are best remembered. Study overlapping of reference materials in your outline making as aids to thorough reviewing and to facility in statement. Answers composed with much labor and difficulty at first may thus finally be made easily and promptly. Do not overlap your outlines too often nor too much.

D. Make outline overlap textbook.—Make your outlines not only overlap one another, but also overlap the approved textbooks used for the "agricultural survey" instruction. The pupil's knowledge will thus become well knit. You can hardly make your outlines and your textbooks excessively overlap.

E. Refer to illustrated matter.—Remember that in most cases your boys are likely to be active and practical in their interests and abilities, rather than "bookish." Therefore, in your outline making refer wherever possible to pages which illustrate the points of the text by diagrams and photographs. You may thus make assurance doubly sure that the pupil shall get the fact or principle which you send him to get.

F. Make outlined study lead to un-outlined.—Of course, a major aim must be so to instruct a boy by formal guidance that he shall, little by little, come to find himself at home among agricultural books, bulletins, and current literature. To be able to find one's own references and information on any given question is an important result of good education.

In connection with the study of certain questions, therefore, ask every boy now and then to find material by consulting the index or table of contents of some book purposely omitted from the project-study outline. In like manner require every boy to consult the agricultural papers with particular reference to his project, as these are received from week to week.

Moreover, require each boy to begin the use of a card index covering information of peculiar value and interest to himself; and of a system of filing, and finding again, such notes, clippings, and free bulletins as each boy may be helped to accumulate for his private use and possession.[1] The agent for agricultural education will be glad to advise instructors as to the uses of such an index and file.

Finally, send every boy home every day with a good agricultural book, bulletin, or report bearing on his home project; also, with a definite problem to work out, or a fact or principle to find, which, if it does not require it, shall at least attract to the boy's aid the cooperation of his father or some other member of the household. By this means the boy's interest in his project may be greatly enhanced. Incidentally by this means, also, all members of the family may become participants in the educational work of the department or school. In sending books home be sure to include those which best illustrate, with diagrams and photographs, the matters to be studied and reported upon.

All this will be effective training of the power of the pupils for independent study and for study at home.

G. Prepare outlines ahead.—Devote one-fourth of the day or week in summer to the preparation of outlines for use during the fall term. The period free from teaching and supervision in winter is extended to three months for the express purpose of promoting the professional improvement of the agricultural instructors. Two-thirds of this period is expected to be devoted to this purpose, and, until outlines covering the needs of a given school or department have been prepared, the instructor is counseled to use a large part of this time for making or improving outlines for use during the spring term. Thus the labor of outline making during the actual teaching terms may be reduced and time gained for laboratory and shop preparations.

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[1] For the purpose of introducing an indexing and filing system suited to farming, the Library Bureau, Boston, has agreed to put together and deliver at cost to agricultural pupils and instructors an outfit which has been used successfully for several years by practical farmers, and is now known by the name "Agricultural Project Study Index and File."

(5) **Approval and cooperation.** *A. Submit outlines for approval.*—The Massachusetts law requires that State aid shall be based upon approval of methods of instruction by the board of education. It is believed that the most satisfactory plan of approval is that of "approval in advance." Instructors are requested, therefore, to submit their project-study outlines for approval as soon as they are drawn.

Outlines like those suggested in Chapter III, above referred to, are approved. Provisional drafts may be made in duplicate by use of carbon paper or any other distinct duplicating device. As soon as made a copy should be mailed to the agent of the board of education in charge of this training. Provided the outline is like those above suggested, instruction may then proceed in accordance therewith pending receipt of advice to the contrary.

B. Be prepared to meet other instructors from time to time. Conferences will be called, now at one school or department and again at another, where efficient project methods are in operation. By observation and discussion each may profit from the experience of others, and thus the entire service may from year to year be improved. Therefore be prepared to discuss and to demonstrate your best methods and results for the benefit of other instructors when called upon to do so.

C. Cooperate in outline printing.—Considerable variation in the excellence of outlines is to be expected. The enthusiast for poultry keeping may be expected to produce the best study outlines for project work in this field; the enthusiast for dairying, the best outlines for dairying; the enthusiast for fruit growing or vegetable growing, the best outlines for study in these fields; and so on through the several fields scheduled for agricultural project training.

The board of education will from time to time print outlines prepared by individual instructors, or will combine outlines prepared by more than one instructor in a given field and print them. Due credit for such outlines as may be found of sufficient merit for this purpose will be given their authors. The best outlines produced anywhere in the service may thus be made available for the improvement of the service everywhere. The hearty cooperation in outline making of all participants in this new type of teaching will be for the individual benefit of every man engaged in it; and, without any misgivings as to the willingness of any instructor to do his part, such cooperative effort is therefore most strongly urged.[1]

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[1] See footnote, Chapter III, p. 57.

As a direct aid to harmony of action and rapid progress, an "Agricultural Project Study Bibliography" has been printed as Bulletin No. 10 by the Massachusetts Board of Education.[1] It is prefaced by explanations and directions as to its use. By adopting uniformly in all the schools and departments the numbers for reference materials therein assigned outlines may be prepared with the minimum of labor, and when printed will be interchangeable and may be used in common. Then, as before suggested, in order to adapt an outline perfectly to the needs of a given pupil, it will only be necessary for the instructor to mark on that pupil's copy the references best suited to his particular productive farm enterprise and powers of comprehension.

20. CONCLUSION.

The suggestions to the agricultural instructor just given may at first sight appear to be counsels of perfection difficult, if not impossible, of execution at the very outset of this new undertaking in State-aided vocational agricultural education.

Nevertheless, in view of the foregoing discussion, they are believed to show the precise direction to which the development of this training should be kept. Furthermore, and finally, by aid of the methods of class organization and individual instruction heretofore proposed, it is believed that the earnest and diligent agricultural instructor will, sooner than he may now expect, find himself capable of carrying out these suggestions exactly and in full.

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[1] See Chapter IV for a reprint of that bulletin with the addition of a few new entries.

Chapter III.

PROJECT STUDY OUTLINES FOR VEGETABLE GROWING.[1]

SUGGESTIONS FOR INSTRUCTORS IN MASSACHUSETTS STATE-AIDED VOCATIONAL AGRICULTURAL SCHOOLS AND DEPARTMENTS.

Of admirable agricultural textbooks, reference books, bulletins, reports, papers, and periodicals, there is now almost a superabundance, and the supply is steadily growing.

The principal problem, therefore, of the agricultural instructor, responsible for putting into effect the Massachusetts plan of home-project or part-time vocational agricultural education for boys over 14 years of age, is the problem of making selected portions of this literature available for his particular boys and their particular projects.

The present chapter discusses one field of agricultural project instruction, and this with special reference to the work and study of first or second year pupils. It suggests outlines following which the pupils may prepare themselves directly for their work; and, at the same time, be taught how to gain from all sorts of reference authorities stated items of desired information.

Outlines like those suggested have proved to be useful models. They show the economy in outline making of using numerals instead of titles in referring to reference literature. The heavy-faced numerals are the numbers assigned to certain titles in the "Agricultural project study bibliography," published by the Massachusetts board of education and reproduced in revised form in Chapter IV of the present bulletin. The numerals in lighter-faced type refer to pages.

It was strongly urged that the numbers assigned the titles in Chapter IV be adopted by all the vocational agricultural libraries in Massachusetts, so that, as future outlines were made, these outlines might be interchangeable and serviceable throughout the system.

Outlines modeled after those here suggested, and applied to the various other fields of agricultural project study, are being approved.

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[1] This chapter reproduces the substance, but does not exactly reproduce the form, of materials first published as Bulletin, No. 5, 1912, by the Massachusetts board of education.

1. PROJECT STUDY AND VEGETABLE GROUPS.

What number of vegetables may a boy safely undertake to grow? How and in what order should the vegetables he grows be studied? These problems are dealt with in the following discussion:

(1) **Possible classifications.**—A careful study of the botanical characteristics, uses, and methods of cultivation of any considerable number of varieties of vegetables will disclose the fact that vegetables naturally fall into different groups, each distinct in important respects from others.

Vegetables have been classified by their food parts under such headings as the following: "Roots we eat," "Leaves we eat," "Seeds and seed pods we eat." To these three groups might well be added, "Stalks we eat" and "Plants we grow for garnishes."

Vegetables have been classified, also, according to the date of planting or earliness of maturity in the open, as, "first early," "second early," "third early," "fourth early," or "late."

Again, vegetables have been classified according to certain botanical characteristics. Under this classification "early" and "late" vegetables may be found in the same group; also, vegetables in a given group, as, for example, those of the parsnip family (*Umbelliferæ*), may differ radically as to their food parts, and run from roots we eat to edible leaves and seeds. The parsnip family includes even the most important garnish plant. Our garden herbs and vegetables belong to at least 17 plant families.

(2) **Possible varieties.**—The following varieties of vegetables have been successfully grown in Massachusetts home gardens, and are believed to be among those which are suitable for project work and study. The arrangement is alphabetic, and throws no light upon choice of preferred varieties where two or more varieties are given.

- Asparagus:
  - Giant Argenteuil.
  - Palmetto.
- Beans, green:
  - Bountiful.
  - Burpee's Stringless.
  - Burpee's Stringless Green-pod.
  - Early Red Valentine.
- Beans, pole:
  - Arlington Red Cranberry.
  - Dreer's Improved Pole Lima.
- Beans, shell:
  - Dwarf Horticultural.
- Beans, wax:
  - Golden Queen Wax.
  - Refugee.
  - Wardwell's Kidney Wax.
- Beets:
  - Crosby Egyptian.
  - Detroit Dark Red.
  - Eclipse.
  - Edmand's.
- Cabbage:
  - All Seasons.
  - Curled Savoy.
  - Danish Ballhead.
  - Jersey Wakefield.
- Carrot:
  - Danvers Half Long.
- Cauliflower:
  - Snowball.
- Celery:
  - Giant Pascal.
  - Paris Golden.

Corn:
- Cory.
- Country Gentleman.
- Golden Bantam.
- Quincy Market.
- Stowell's Evergreen.

Cucumber:
- Arlington White Spine.
- Davis Perfect.

Dandelion:
- Improved French Thick Leaved.

Eggplant:
- Black Beauty.
- New York Improved.

Endive:
- Broad-Leaved Batavian.
- Green Curled.

Kohl-rabi:
- Early White Vienna.

Leek:
- Carentan.

Lettuce:
- Black Seeded Simpson.
- Black Seeded Tennis Ball or Big Boston.
- Deacon.
- Salamander.

Muskmelon:
- Emerald Gem.
- Miller's Cream.
- Rocky Ford.

Onions:
- Yellow Globe Danvers.

Parsley:
- Arlington Double Curled.

Parsnips:
- Abbott Hollow Crown.

Peas:
- Gradus.
- Gregory's Excelsior.
- Surprise.
- Telephone.

Pepper:
- Ruby King.
- Sweet Mountain.

Potatoes:
- Green Mountain.
- Irish Cobbler.

Radish:
- Early Scarlet Globe.
- French Breakfast.

Rhubarb:
- Linnaeus.
- Victoria.

Salsify:
- Mammoth Sandwich Island.

Spinach:
- Long Standing.
- Round Thick Leaf.
- Savoy-Leaved.

Squash:
- Crookneck.
- Early Prolific Marrow.
- Hubbard.

Tomato:
- Bonny Best.
- Chalk's Early Jewel.
- Earliana.
- Stone.

Turnip:
- American Rutabaga.
- Early Milan.
- White Egg.

(3) **Classification by methods of cultivation.**—The following classification of the foregoing varieties of vegetables is based on essential methods of cultivation and will probably best serve the purposes of project study:[1]

- Class I. Annual Vegetables.
  - Subclass I. Crops grown for Subterranean Parts.
    - Group 1. Root Crops.
      - Beet, *Beta vulgaris.*
      - Carrot, *Daucus carota.*
      - Parsnip, *Pastinaca sativa.*
      - Radish, *Raphanus sativus.*
      - Salsify, *Tragopogon porrifolius.*
      - Turnip and rutabaga, *Brassica.*
    - Group 2. Tuber Crops.
      - Potato, *Solanum tuberosum.*
    - Group 3. Bulb Crops.
      - Onion, *Allium Cepa, A. fistulosum.*
      - Leek, *A. Porrum.*
  - Subclass II. Crops grown for Foliage Parts.
    - Group 4. Cole crops.
      - Cabbage, *B. oleracea.*
      - Cauliflower, *B. oleracea.*
      - Kohl-rabi, *B. oleracea.*
    - Group 5. Pot-herd crops (used for "Greens").
      - Spinach, *Spinacea deracea.*
      - Beet, *Beta vulgaris.*
      - Dandelion, *Taraxacum officinale.*[2]
    - Group 6. Salad Crops.
      - Lettuce, *Lactuca sativa.*
      - Endive, *Cichorium Endivia.*
      - Celery, *Apium graveolens.*
      - Parsley, *Carum Petroselinum.*
  - Subclass III. Crops grown for Fruit or Seed Parts.
    - Group 7. Pulse crops.
      - Bean, *Phaseolus, Dolichos, Vicia.*
      - Pea, *Pisum sativum.*
    - Group 8. Solanaceous crops.
      - Tomato, *Lycopersicum esculentum.*
      - Eggplant, *Solanum Melongena.*
      - Pepper, *Capsicum annuum.*
    - Group 9. Cucurbitous or vine crops.
      - Cucumber, *Cucumis sativus.*
      - Melon, *C. Melo.*
      - Squash, *Cucurbita.*
    - Group 10. Corn.
      - Sweet corn, *Zea Mays.*
- Class II. Perennial Vegetables.
  - Asparagus, *Asparagus officinalis.*
  - Rhubarb, *Rheum Rhaponticum.*

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[1] The outlines of this classification were proposed a decade ago in "Principles of Vegetable Gardening," pp. 240–242, by Prof. L. H. Bailey, and have been followed in one of the latest studies of the subject, "Vegetable Gardening," 1912, pp. 196–199, by Prof. R. L. Watts.

[2] This is a perennial, but when grown in a garden does not occupy a given piece of ground more than a year.

(4) **Varieties of vegetables per pupil.** *A. Desirable range.*—Glancing over the above list (2) and classification (3), embracing some 75 varieties and 11 groups, it would appear to be desirable that each boy should grow and study at least one variety from each group. The least number of varieties dealt with would then be 11, and, within certain groups, would permit of a considerable range of choice for suiting the tastes of the boy or the likings of his family.

B. Surplus for sale.—For testing his results by the strictest commercial standards, each boy, in addition to growing certain varieties of vegetables in sufficient quantity for supplying the summer and winter needs of his family, should be encouraged, if not required, to grow at least one variety on such an extended scale as to yield a surplus for sale. If his family were in modest circumstances, and could only allow him credit at current prices for vegetables produced for home use, his surplus might make his biggest crop his only cash crop. It can not be doubted that the prospect of cash returns must be considered a most powerful incentive to competent, persistent, and intelligent project work and project study.

C. Experience as a guide.—Of course there is great variation in capacity for fruitful study and competent garden work; but even children under 14 have successfully produced in school-garden work more than a half-dozen varieties of vegetables; and boys of secondary-school age, when giving only part of their time to such work, have produced, with clean culture and profitable results, fully twice as many.

D. Judgment of the instructor.—It is evident that the number of varieties per pupil must be left to the instructor. He must exercise his best judgment in approving the number, as well as the sorts, of vegetables to be grown.[1]

Where individuals have little or no preference as to the variety within a given group, one pupil may be assigned one variety, other pupils the other varieties. Where there is school land, varieties not chosen for home growing may be grown at the school. Thus the work, study, and observation by the whole class may be made to cover nearly, if not completely, each entire group.

The 6-variety boy should not be permitted to undertake 12 varieties, nor should the boy capable of completing a 12 or 15 variety project be permitted to stop short at a 6.

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[1] Mr. J. H. Fay, a teacher of experience in project instruction and home work supervision, thus summarizes the situation as he sees it:

1. The varieties to be chosen should be adapted to the soil, exposure, and location of land on the farm.
2. The varieties should be those most easily grown with success.
3. Use varieties serving the most useful, economic, and instructive purposes.
4. Use those sorts best suited for local sale or home consumption.
5. Aim to have the boy's home gardening supplement and improve the present kitchen garden; or where such does not exist, or is very inferior, make it of such a nature that its value will be realized and permanency secured.
6. If field projects of a commercial nature are the ones in view, then local conditions as to soil, markets, etc., will again determine the varieties to be selected.

2. PROJECT STUDY BY VEGETABLE GROUPS.

(1) **A practical approach.**—Since productive work on the home farms of the pupils is such a fundamental feature of the project and part-time method of agricultural education, there are obvious advantages in the above classification of vegetables by methods of cultivation.

(2) **Aid to garden planning.**—Familiarity with the general cultural requirements of the various groups is necessary to the first intelligent steps in home-garden planning. These requirements are given by various authorities. The following notes are from Prof. Bailey's "Principles of Vegetable Gardening," pages 271–433:

Group 1. Root crops require a cool season and deep soil. They are grown in drills, and usually are not transplanted. They are used both as main-season and secondary crops. All are hardy. No special skill is required in growing them.

The necessity of deep soil is apparent when one considers that the value of a root depends to a large extent on its straightness or symmetry. In hard and shallow soils roots are short and they tend to be branched and irregular. Fine tilth does much to insure quick growth, and quick growth improves the quality.

Group 2. Tuber crops. The potato.—Deeply pulverized cool soil, holding much capillary moisture and rich in potash, deep and early planting, level culture, frequent surface tillage to conserve moisture, spraying to insure healthy foliage—these are requisites of the best potato culture. The potato is propagated by means of tubers. It thrives best in a relatively cool climate; in the South it is successful only as a spring and fall crop, for the midsummer season is too continuously hot.

In most cases a heavy yield of potatoes is largely a question of moisture.

Group 3. Bulb crops.—All the bulb crops are hardy, require a cool season, and moist, rich soil, with a loose surface. Usually they are not seed-bed crops. They are used both as main-season and secondary crops. They are propagated by both seeds and bulbs. These crops are grown chiefly for the underground bulbs (but the leaves are often used in stews and seasonings).

Group 4. Cole crops.—All cole crops are hardy and demand a cool season and soil and abundance of moisture at the root. Except the kales and kohl-rabi, all are seed-bed crops, and even kales are often started in beds. Each plant requires considerable space in order to develop well. Cole crops are grown for the vegetative aerial parts rather than for fruits or roots.

Group 5. Pot-herb crops.—Pot-herb crops, or "greens," are grown for their leaves; therefore they must make quick growth in order to be crisp and tender; the ground must have good surface tilth and much available plant food; the application of soluble nitrogenous substances is usually important, particularly when the growth is nearing completion. Most pot-herb crops demand a cool season, and nearly all of them are partial-season crops, and are therefore treated as succession or companion crops.

Group 6. Salad crops.—As a general statement, it may be said that salad plants require cool, moist soil and a quick continuous growth if the best results are attained. They are often benefited by a special application of quickly available fertilizers during growth, particularly of nitrogen in those species which are desired chiefly for a quick growth of leaves.

Group 7. Pulse crops.—Botanically peas and beans are very closely related, but they have few points in common from the cultural point of view, since peas are hardy, cool-season plants and beans are tender, warm-season plants. Both are leguminous crops, and are therefore capable of using atmospheric nitrogen. As garden crops, however, they may need applications of nitrogen in order to secure a quick start, particularly if an early crop is desired. "It is frequently the wiser economy to apply nitrogen, particularly if they are raised upon land which has not been previously planted with these crops and thus may not possess the specific nitrogen-gathering bacteria." (Voorhees' Fertilizers, p. 269.)

Peas.—Peas are a partial-season crop, requiring cool season and a soil not overrich; seed is sown where the plants are to stand; grown in drills, hardy.

Beans.—Garden beans represent several species, but all the common kinds are very tender to frost and require a warm season and sunny exposure; seed is sown where the plants are to grow; usually grown in drills, except the tall kinds; the common bush beans are partial-season plants.

Group 8. Solanaceous crops.—Tomatoes, eggplants, and their kin are hot-season plants. They require nearly or quite the entire season in which to mature. Usually they grow until killed by frost, at least in the north, and the production of a heavy crop depends largely on securing an early start. They are seed-bed crops, and they need abundance of quick-acting fertilizers applied relatively early in their growth. They are grown in hills.

Group 9. Cucurbitous or vine crops.—Cucurbitous crops are annuals, grown for their fruits; they are tender to frost; they require a warm season and a full exposure to sun; they are long-season crops, and with most of them a quick start is essential in order that they may mature the crop before fall; they are grown in hills, as a main crop; they are planted in the field or in frames, depending on the region and the period at which the crop is wanted; they transplant with difficulty, and if the plants are started in advance of the season they are grown in pots, boxes, or on sods.

Group 10. Corn (other names omitted).—The plants here mentioned are all warm-weather crops; they are annuals, or grown as such, and they are cultivated for their immature fruits; they should have quick soil; usually they are not transplanted; other than good tillage, no special treatment is required.

Group 11. Perennial crops.—The management of perennial crops differs from that of other vegetable-gardening crops in the fact that they are more or less permanent occupants of the ground, and therefore must be given an area to themselves, where they will not interfere with the customary plowing and tilling; in the fact that the chief tillage and care are required early and late in the season; and also because the fertilizing is secured chiefly by surface dressings in spring and fall.

(3) Good but inadequate.—This knowledge of the cultural requirements by groups above given affords a practical approach to vegetable gardening. It probably will enable a boy to decide what groups are suitable for his land, and, therefore, what he may hope to grow for his family or cash crop. It may, consequently, be sufficient foundation for the boy's preliminary garden sketch. A careful examination must show, however, that almost everything is yet to be learned as to the individual cultural requirements of the vegetables which the boy selects for his project work.

Accordingly, only so much time should be given to the study of vegetable groups as may be necessary for reasonably intelligent selection of the varieties which are to be grown. In fact, so much knowledge may well be to a large extent a gift from the instructor to the class as a whole.

3. PROJECT STUDY BY VEGETABLE VARIETIES.

Thorough going project study will begin when the individual pupils settle down to the study of the particular vegetables which each has decided he would prefer to produce. Such study will necessitate the formulation of project-study outlines for the chosen vegetables.

It probably will always be the case that a considerable number of varieties will be selected by the entire class, while other varieties will be selected by but part of the class, perhaps by but a single pupil. Project study would better begin with those varieties with which all are to work. The outline making should, therefore, begin with those varieties which are to be grown by all. Outlines for the remaining varieties may then be made.

Elsewhere[1] a project dealing with a staple vegetable, sometimes grown in the garden and grown sometimes as a field crop, has been carefully analyzed for the purpose of showing the character and extent of the project study pertinent to a single crop.

Two examples of project-study outlines will here be given. These will show project-study materials organized for classroom and individual instruction, in connection with home gardening projects. The first outline determines the precise object of the project; its scope, whether modest or more ambitious; and the things to be done in general preparation of the land, etc. The second deals with a particular vegetable. Moreover, since the vegetable elsewhere analyzed is a staple article of food, namely, the potato, the vegetable here chosen is a salad plant.

Lettuce, the vegetable selected for the second outline, might serve, it will be seen, a most excellent purpose for introducing the study of vegetable growing. Here are some of its advantages for such study: It is an attractive home crop and a very important cash crop. It may be grown in the house, in a hotbed, cold frame, or greenhouse, or in the open; among the earliest vegetables, among the latest and for a continuous summer supply; or to keep the land busy as a companion or succession crop in connection with other vegetables. It teaches the importance of abundant feeding and watering as fundamental to both quantity and quality. It naturally singles out for study one of the most important elements of plant food. Since in connection with it the first labor is likely to be performed, the first seeds, fertilizers and tools used, and the first product disposed of to the family for credit or to the public for cash, it is one of the best vegetables for initiating the keeping of records and accounts.

It will be seen that these outlines overlap slightly at certain points. The wise instructor will make a careful study of such overlapping in his outline making. He will find therein fruitful opportunities for reviewing important elements of both principle and practice. As aids to similar reviewing, references will be found to the approved textbooks used by the pupils in their "agricultural survey" instruction.

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[1] Compare 74th annual report, for 1909-10, of Massachusetts Bd. of Ed., pp. 248-252; also, Eleventh Yearbook of the National Society for the Study of Education, pp. 47-50.

If, at first glance, it should be feared that the second outline is too full, it should be understood that no pupil is expected to look up every reference under every question. Further, it should be understood that certain questions of agricultural science which a given instructor intends to treat in connection with the growing of other vegetables may, at that instructor's discretion, be omitted or touched upon but lightly in connection with lettuce. The effort here is to show a good form of outline for use, not only by a whole class in any given school or department but by all classes throughout the entire vocational agricultural education service in Massachusetts.[1]

Matter suggested as desirable, particularly for the study of the most capable pupil, under the heading "Broader results, project-study record diagram," figure 3, Chapter II, has been dealt with in the following outlines in footnotes. Such questions as those in the footnotes may be omitted by all save the most exceptional pupils.

The first outline immediately follows; the second begins on page 62.

(*1*) *Suggestive project-study outline—Kitchen gardening.*

Project: Kitchen gardening.

Object, Scale, and First Steps of Projects.

Guiding questions for planning this project.	Guiding questions for studying and understanding this project.
1. Shall you grow vegetables? [2]	(1) What are the advantages of a good home garden? 1: 187–188 5: 325 13: 5–6 16: 3–6, 8, 11 25: 335 27: 10, 12–16 39: 3, 490 40: 1ff. (2) Could you sell part or all of your product outside the family?
2. Where shall you grow them?	(1) Where was the home garden last year? A. Did the vegetables grow well in it? B. Was it large enough to supply the family or were such vegetables as winter squashes and potatoes grown as field crops? (2) May it be desirable to change the location of a garden or of the place of growing certain vegetables in an old garden? A. What is "rotation" and its significance for vegetable growing? 26: 13 39: 493 276: 32–34 (3) Which way should the garden slope? 26: 7 (4) What soil is best for a garden? [3] 1: 188–189 26: 7–8 27: 22 39: 19, 21f., 25–26, 27

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[1] The Massachusetts Board of Education now has in the hands of the printer a bulletin of about 115 pages, giving outlines prepared by the vocational agricultural instructors for their pupils in 1912–13, in which the following vegetables are treated:

Beans.
Beets.
Cabbages.
Carrots.
Celery.
Cucumbers.
Melons.
Onions.
Parsnips.
Peas.
Potatoes.
Radishes.
Rhubarb.
Spinach.
Sweet corn.
Tomatoes.

Other bulletins are in preparation, containing project-study outlines on fruit growing, poultry keeping, swine husbandry, and bee keeping, all of which have grown out of the last year's teaching.

[2] What is "olericulture?" 39: 1 276: 1–6.

[3] What do you know about "portable soil" and renting contracts among small gardeners near Paris? 874: 54.

Kitchen gardening—Continued.

Guiding questions for planning this project.	Guiding questions for studying and understanding this project.
2. Where shall you grow them—*Continued.*	(5) May the garden vegetables be part of a field crop? How? Advantage? **1:** 188 (6) Is protection from the wind important? Why? **39:** 14 (7) Is good drainage a necessity? Why? **1:** 189 **5:** 91–92 **13:** 9 **39:** 26 (8) On the whole, what may be considered the best location for a garden? **1:** 188 **5:** 235 **11:** 451 **13:** 6 **27:** 20 **39:** 12–14, 491, 492–493 (9) Shall you grow vegetables under glass? [1] A. What are "hotbeds" and "cold frames"? Cost of construction and operation? **5:** 236–237 **11:** 483 **13:** 12–15 **25:** 145 **39:** 355–356 **276:** 44–79 **747:** 250–253 **876:** 94–96 B. Shall you use a "cold frame"? C. Shall you use a "hotbed"? (10) In view of the above, where shall you grow your vegetables?
3. What kinds shall you grow?	(1) Shall you grow both hardy and tender vegetables? A. What are "hardy" and "tender"? **753:** 159 (2) What is a practical way of grouping vegetables by their cultivation requirements? **39:** 196–200, 241 **276:** 240–242, 271, 301, 314, 329, 347, 356, 380, 392, 411, 423, 429 433 (3) What kinds are liked best by your family? (4) What kind could you sell best? (5) What kinds or varieties, therefore, shall you grow for A. Family use? a. Summer? b. Winter? B. Sale?
4. What quantities shall you grow?	(1) Shall you undertake to supply your family with all of the vegetables needed for the entire year? [2] A. What kinds of vegetables were used on the home table last year? B. What quantity of each was required? C. What were grown at home and what were purchased? D. About what was the total value of the vegetables used in the last 12 months by your family? E. Shall you work alone or in cooperation with some of your family, a neighbor, or a fellow pupil? **16:** 9–10

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[1] Open air *v.* hothouse returns, according to Twelfth Census? **853:** 194

[2] What may comparatively small areas produce under the best methods? **5:** 234 **13:** 5 **33:** 9–17 **276:** 31, 35 **853:** 69–109, 118–121, 123, 127, 407–408.

Kitchen gardening—Continued.

Guiding questions for planning this project.	Guiding questions for studying and understanding this project.
4. What quantities shall you grow—*Contd.*	**(1) Shall you undertake to supply your family with all of the vegetables needed for the entire year—*Continued.*** **F. How large was the garden last year? Sketch outline, give dimensions, and figure area.** **G. How large a garden will supply a family of five or six?** **11:** 454–455 **276:** 31, 35–43 **H. In view of the foregoing study, and assuming that a garden should be cultivated carefully about twice a week for the family supply, how large an area shall you undertake to work?** **(2) Shall you grow a surplus for sale?** **A. What quantity could be readily sold?** **B. What would be the cost of marketing?** **C. In view of the above, what quantity shall you try to produce for sale and what land allowance shall you make?**
5. Shall you map your garden?	**(1) Advantages of, and materials for making a garden plan?** **25:** 8, 24–28, 42 **27:** 21, 23, 25 **271:** 279–284 **753:** 324 **876:** 61 **A. What scale shall you use?** **a. What is "drawing to scale"?** **B. Shall you show the points of compass? Why?** **876:** 61 **C. Which way shall the rows run—lengthwise or crosswise?** **276:** 31–32 **D. Shall the rows run north and south? Why?** **25:** 8–11 **E. Shall your plans show such double cropping as you have decided upon?** **a. What is "double cropping"?** **39:** 475–489 **F. In what part of the garden shall you put low-growing and in what part high-growing plants?** **G. Shall you observe strictly the rules of "rotation" in locating your deep and shallow rooted plants?** **H. What are some model kitchen garden plans?** **11:** 8–9, 451–454 **13:** 7–8 **16:** 2–28 **25:** 11–14 **27:** 21, 23, 25 **31:** 20–21 **276:** 33, 37, 39, 41
6. How and when shall you prepare your land?[1]	**(1) Shall you use stable manure?** **A. Value of stable manure in vegetable growing? Should it be well rotted? Apply when and how much?** **B. How should stable manure be stored and handled?** **C. Should it be thoroughly mixed with the soil? Plowed or spaded under? Or raked, spaded, or harrowed in?** **1:** 97–100, 188 **13:** 11 **16:** 30–31, 33–35 **24:** XVII **25:** 4, 5, 7, 112 **27:** 35–38 **39:** 41–42, 49–50, 492 **271:** 275 **285:** 173–181 **616:** 5–32, esp. 16–29 **697:** 113–181 **876:** 56–57

[1] **What are motives for fair and square treatment of the land? 1:** 100 **876:** 57–58.

Kitchen gardening—Continued.

Guiding questions for planning this project.	Guiding questions for studying and understanding this project.
6. How and when shall you prepare your land—*Continued.*	(1) Shall you use stable manure—*Continued.* D. What will your manure cost? (2) Shall you use green manure? A. What is "green manuring"? What are its advantages and disadvantages? **1:** 100 **25:** 16–17 **39:** 53–57 **279:** 349–370, esp. 349, 370 **285:** 171, 183, 185, 186, 188, 189, 191 **876:** 58–59 (3) Shall you use compost? A. What is "humus"? What does it do? **5:** 95–96 **25:** 4, 7, 8, 61, 246, 247, 274, 299, 306 **27:** 22 **278:** 25–26, 31, 35, 67 **285:** 27, 38, 41, 43, 44, 62, 67 **752:** 108–109 **767:** 33, 38, 48, 51 B. What is "compost"? How made? **25:** 17, 18, 34, 61, 112, 113, 152, 306 **26:** 21 **278:** 242, 243 **285:** 171, 181 **876:** 59–60 C. What is "short" manure? Should stable manure be composted? **24:** XVIII **27:** 36–38 **39:** 47–49 **276:** 95–96 D. What will your compost cost? (4) Shall you use commercial fertilizer? A. Most lands usually contain sufficient quantities of all save what elements of plant food? **11:** 111 B. What is "commercial fertilizer"? Its uses and its sources? **1:** 97–98 **5:** 114–125, 131, 132, 408 **13:** 11–12 **24:** XX **25:** 6, 32–35, 58–71 **39:** 58–65 C. What may be considered an "all-around" fertilizer, or a "basic mixture," for vegetable growing? **25:** 33 **276:** 104–106 **633:** 267 a. Shall you use a basic or all-around mixture? b. If so, what will it cost? D. Shall you use commercial fertilizers separately, and not mixed? a. Do certain vegetables prefer particular fertilizers, as, for example, celery, beets, peas, lettuce, cabbages and tomatoes? **5:** 116–123 **25:** 146 **26:** 225 **39:** 235, 250, 270, 312, 356, 411–412, 458–460 **276:** 359 **409:** 64 **633:** 277 b. What shall you spend for commercial fertilizers?
7. Shall you use lime?	(1) Shall you use lime on your vegetable land? A. What is the effect of lime upon the soil? **279:** 304–307

Kitchen gardening—Continued.

Guiding questions for planning this project.	Guiding questions for studying and understanding this project.
7. Shall you use lime—*Continued.*	(1) Shall you use lime on your vegetable land—*Continued.* B. Effect upon the plant? **279:** 302–304 C. When most beneficial? **279:** 307–309 D. How can you tell when lime is needed? **5:** 126 **25:** 7 **39:** 65–66 **279:** 309–310 **752:** 98 **767:** 95–99 **770:** 46–50 E. When, in what forms, and how may lime be applied? **5:** 127–128 **278:** 70 **279:** 302–311, 314 F. Where shall you get your lime, and what will it cost?
8. How deeply and thoroughly shall you pulverize your vegetable soil?	(1) It may be assumed that, in deciding the above questions as to plant foods and their application, the dates and manner of plowing and harrowing have been in part determined. Other questions, however, remain to be answered. (2) What is the relation of a thoroughly pulverized seed bed to quick germination and rapid growth? Best tools to use? Best methods of using them? **1:** 74–76, 83–87, 96, 190 **11:** 87–114 **13:** 9–10, 15, 21–22 **24:** XIX **25:** 35–42 **39:** 28–40 **276:** 155 **278:** 91–130 **279:** 390–392 **285:** 90–92, 156–158 **767:** 67–72 **770:** 5–6 **876:** 77–78, 88–89 A. What tools shall you use?[1] a. What have you now? Make a list. b. What must you buy? Make a list. B. What will be your expense for these tools?
9. Plant how?	(1) What are the relative advantages of planting by hand, and with a planter or seed sower? **11:** 117 **16:** 94 **24:** xiii, xiv, xix–xx **25:** 54 **39:** 135, 137 **276:** 163–164 A. Shall you use a planter or seed sower? B. What will it cost you?
10. Cultivate how?	(1) What is the relation of "clean culture" and preservation of a thin "earth mulch" to quality and quantity of vegetables? And shall you use horse or hand tools? **11:** 95–96, 101–107 **13:** 21 **16:** 96–103 **25:** 31–32, 35–37, 38 **27:** 18, 52–56, 157–159 **39:** 358 **276:** 360 **853:** 112–113 **874:** 76–81 A. Are weeds ever beneficial? What are weeds? Are there not better "cover crops"? **409:** 88 **768:** 71–73 B. Should care be exercised in weeding and cultivating? **25:** 37–38 (2) What tools shall you use for cultivating? (3) What will these tools cost? Compare **25:** 32, 36, 37

[1] What do you know about the history and kinds of tillage tools? **5:** 82–94   **25:** 31–32   **271:** 81

Kitchen gardening—Continued.

Guiding questions for planning this project.	Guiding questions for studing and understanding this project.
11. How gather, care for, and dispose of product?	(1) The questions as to tools, receptacles, etc., required for gathering and disposing of the garden vegetables can be better answered after the individual varieties to be grown have been studied. (2) What means of storage have you, or shall you provide?[1] **11:** 158–161, 475 **25:** 113–119 **39:** 193–195 **274:** 141, 142, 146, 147, 149 **276:** 214, 224–235 **753:** 162–163 **767:** 31–33, 48–79, 80, 81, 86, 87, 109 (3) What salesmanship principles as to attractiveness of person and products, advertising, etc., shall you put into practice in selling your surplus? **5:** 380–383 **39:** 162–192 **276:** 214–224 **753:** 327–328 **761:** 154–160 **850:** 33, 35, 41, 42, 69, 72, 74, 77, 79, 87, 88, 92
12. What accounts shall you keep of your gardening project?	(1) What are proper elements of cost and the best methods of accounting in vegetable production? **5:** 380–383 **39:** 162–163 **276:** 214–224 **465:** 109–138, 139–144, 145–197 **492:** 1–21, 22–41, 82–100 **753:** 327–328 **761:** 154–160 **782:** 157, 159 (2) What account with your family shall you keep? **492:** 143–152

[1] What do you know about the canning and preserving of vegetables? **271:** 157–177.

(2) *Suggestive project study outline—Lettuce growing.*

Project: Kitchen gardening.

Subproject: Lettuce growing.

Guiding questions for planning this project.	Guiding questions for studying and understanding this project.
1. Plant where?	(1) Where have you seen good lettuce growing? Of whom may you seek advice?[1] **31:** 15 A. Lettuce belongs to what cultural class, and what are the soil requirements of that class? **276:** 241 B. What soil is best for lettuce? **39:** 355 **276:** 356, 358–359 **874:** 119 C. At what spot are your soil conditions best for lettuce? How best? **874:** 54–55 (2) Shall you grow lettuce in more than one part of the garden?[2] A. What is companion cropping? **39:** 357–358, 477, 478, 480, 482, 488 **276:** 358 **747:** 257 B. What is succession cropping? **1:** 189 **25:** 13 **31:** 22–23 **271:** 105 **276:** 358–359 **853:** 191–192, 330 **876:** 119

[1] Origin and importance of lettuce? **11:** 483 **25:** 149 **38:** 361 **39:** 351 **276:** 360. Botanical features and classifications? **26:** 223 **276:** 360–361 **285:** 85–86.

[2] Possible returns from double cropping? **853:** 329–331.

Lettuce growing—Continued.

Guiding questions for planning this project.	Guiding questions for studying and understanding this project.
1. Plant where—*Contd.*	(2) Shall you grow lettuce in more than one part of the garden—*Continued.* C. In view of the above references, what combinations might you make? D. What combinations shall you make? (3) Where shall you start your plants? A. In the house? **1:** 190 **25:** 63–68, 145 **26:** 47 **285:** 51 **767:** 212 **876:** 92–93, 119 B. Under glass? [1] a. What is a cold-frame? A hotbed? **5:** 236–237 **11:** 483 **25:** 145 **39:** 355–356 **276:** 44–79 **747:** 250–253 **876:** 94–96 C. How much time may be gained by starting plants indoors or under glass? **25:** 51–52 **31:** 113 **39:** 355 **276:** 49 (4) How large an area needed? [2] A. In the garden? a. Plants per acre? **851:** 329 b. How may thinnings be used? Relations of such use to area required? **11:** 483 **24:** 152 **25:** 146 **31:** 33 **276:** 359 **876:** 91 c. Your estimate of area needed? B. Under glass? a. What is a "sash"? **276:** 46 b. What is a "frame"? **276** 46 c. Number of lettuce plants per sash? **31:** 113–114 **276** 46 d. Your estimate of space needed under glass?
2. Plant what?	(1) What varieties have you seen or eaten? [3] (2) What variety is best liked by the family? (3) What variety sells best where you might sell your surplus? (4) Is there a better all-round variety than Black Seeded Tennis Ball? Why? **11:** 484 **25:** 50, 130, 131, 144–145, 147 **26:** 225–226 **31:** 24, 33, 113 **39:** 351–354 **276:** 358 **292:** 557–558 **876:** 119 (5) What is your estimate of the quantity of seed needed? **11:** 484 **26:** 46 **39:** 495

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[1] What do you know of experimental lettuce growing and its production under glass by market gardeners? **271:** 23–26, 30, 33, 120, 122 **747:** 248–250 **876:** 93.

[2] Heads per acre and possible profit? **31:** 114 **39:** 358.

[3] What are some estimates of the number of known varieties of lettuce? **276:** 361.

Lettuce growing—Continued.

Guiding questions for planning this project.	Guiding questions for studying and understanding this project.
3. Plant when?	(1) What is a "planting table"? **25:** 327-334, esp. 331 **274:** 106
	(2) How long does it take lettuce to mature for table use? **25:** 149 **31:** 33, 113
	(3) How early and how late may lettuce be planted? **25:** 144, 146, 149 **26:** 223-225 **31:** 21-22 **33:** 113-114 **39:** 357-358
	(4) Should supply be sought for hot months? **1:** 191 **11:** 484 **25:** 147-148 **39:** 354 **276:** 357-359
	(5) What is "pricking out" and how is it done? **24:** xxii-xxiii **25:** 145-146 **876:** 94
	(6) Does transplanting aid heading? **31:** 114
4. Seed, get when and where?	(1) Shall you use home-grown or purchased seed?[1]
	(2) Shall you grow your own seed for next year? **26:** 51 **276:** 165-168 **292:** 179
	A. Pound of seed from how many plants? **39:** 355
	B. What is the appearance of lettuce seed as to size, shape, surface, and color or colors? **25:** 149 **38:** 361
	(3) Shall you get your seed early and test it? **25:** 52-53
	A. What is the relation of a high-sprouting test to high vegetative power? **276:** 149-154, esp. 151
	B. What conditions are required for sprouting seeds? **285:** 70-75
	C. Is lettuce seed naturally strong or weak?
	a. How shall you make a test for percentage of germination? **1:** 230-231 **5:** 49, 51 **31:** 25-27 **271:** 280 **75:** 20 **876:** 87-88
	b. Make the test for strength, using lettuce seed instead of corn, and otherwise following directions given in reference. **285:** 81-82
	D. How shall you test your lettuce seed for percentage of impurities? **5:** 51-52 **876:** 88
	E. What is "longevity" of seeds, and how does lettuce seed compare with other seeds in longevity? **5:** 405 **276:** 138

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[1] What is a seed? **279:** 381. Why is lettuce called an "annual"? **31:** 33 **38:** 361. Most of seed is produced where? **39:** 355. Is changing seed ever an advantage? **279:** 384-386.

Lettuce growing—Continued.

Guiding questions for planning this project.	Guiding questions for studying and understanding this project.
4. Seed, get when and where—*Continued.*	(3) Shall you get your seed early and test it—*Continued.* F. Do new and old seeds look alike? **25:** 46 **279:** 388 G. Is large seed better than small? **5:** 53–54 **279:** 388 **876:** 226–227 H. How may large be separated from small? **25:** 46 I. What is the cheapest seed? [1] **5:** 52–53 (4) Where can you get the highest grade lettuce seed? (5) When can it be had? (6) At what cost?
Fertilize, with what, when, and how?	(1) Has your garden been heavily fertilized with stable manure? A. What is heavy manuring for a garden? **31:** 17–19 B. How many cords of manure per acre may be used for lettuce? **25:** 145–146 **31:** 113 C. Has your manuring been sufficient for your lettuce? (2) Shall you use a mixture of commercial fertilizers for your garden? A. What is a "basic mixture" for vegetable growing? **276:** 104–106 **633:** 267 B. How apply? **39:** 59–65 **285:** 15 (3) What special kind of commercial fertilizer gives the quickest and best growth of lettuce? What are the sources of it and symbol for it? [2] **5:** 116–123 **25:** 146 **26:** 225 **39:** 356 **276:** 359 **633:** 277 A. What is the relation of the quality of lettuce to rapid and continuous growth? **276:** 106 **292:** 178 B. How, when, and at what rate may nitrate of soda be safely applied? **25:** 146–147 **26:** 27–28 **31:** 7 **39:** 60–61 **292:** 178 **409:** 57 C. How do plants feed? [3] **1:** 96, 105, 107 **5:** 64–67 **285:** 17–20 **750:** 16-17 **768:** 62–66 D. Why is a fertilizer which is readily soluble "quick acting"?

[1] What are other seed tests which may be made? **767:** 202–211.

[2] What tests or experiments have you made for noting the presence of nitrogen and its action? What can you say of its sources and its relations to plants? **1:** 79–80, 98, 100 **5:** 60, 61, 63, 97, 113, 116, 119, 121, 122, 136, 138, 139, 140, 141 **398:** 226–248 **409:** 10, 11, 20, 37, 43, 49, 87, 92, 97, 99, 105, 108, 110, 170, 171, 205, 214, 216, 217 **410:** 26–30, 179–184, 339 **747:** 24, 34, 35, 37, 38–40 **761:** 28 **768:** 21–23.

[3] What can you say about the nature and growth of roots? **298:** 39, 41, 45, 49, 50, 60, 61, 62, 77, 82, 160, 161, 167, 247, 447 **768:** 62–66.

Lettuce growing—Continued.

Guiding questions for planning this project.	Guiding questions for studying and understanding this project.
5. Fertilize, with what, when, and how—*Con.*	(4) If your lettuce area is small, may liquid manure be used to advantage? A. How prepare it? How control its "strength?" Is it a plant food or a "plant tonic?" **24:** xix **25:** 101–102, 104 **39:** 61 **876:** 104 (5) When shall you get your plant food supplies? (6) What will be the cost of your lettuce fertilizer? Compare **25:** 33
6. Shall you use lime?	(1) Is your land quick? A. When is land "quick?" **276:** 85 B. How may lime aid quickness? **276:** 96 **285:** 149, 200 **876:** 230 (2) Should lime be used in vegetable growing? How find out? **5:** 126 **25:**7 **39:** 65–66 **279:** 310 **752:** 98 **767:** 95–99 **770:** 46–50 (3) Is lettuce sensitive to soil acidity? **5:** 126 (4) When and in what forms may lime be applied? **5:** 127–128 **278:** 70 **279:** 302–311, 314 (5) What will your lime cost.
7. Prepare ground for seed with what and how thoroughly?	(1) What is the relation of a thoroughly pulverized seed bed to germination and growth? Best tools to use? Cost? Best method of using them?[1] **1:** 74–76, 83–87, 96, 190 **11:** 87–114 **13:** 9–10, 15, 21–22 **24:** xix **25:** 35–42 **39:** 28–40 **276:** 155 **278:** 91–122 **279:** 390–392 **285:** 90–92, 156–158 **767:** 67–72 **770:** 5–6 **876:** 77–78, 88–89 (2) Keep accurate record of cost or preparing ground, including proper proportion of original plowing and harrowing.
8. Plant how?	(1) Shall you plant by hand or with a seed sower? **11:** 117 **16:** 97 **24:** xix–xx **39:** 137 **276:** 163–164 A. How is a seed sower set for lettuce seed? B. How is lettuce seed planted by hand? **25:** 54–55 **39:** 135 (2) Shall you soak your seed? **39:** 134 (3) Shall your rows be straight? **25:** 36

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[1] What do you know about the history and kinds of tillage tools? **5:** 89–94 **252:** 31–32 **271:** 81.

Lettuce growing—Continued.

Guiding questions for planning this project.	Guiding questions for studying and understanding this project.
8. Plant how—*Continued.*	(4) Plant how deep, and how far apart between rows and between plants? To what extent should size of seed, time of year, weather, and soil conditions control depth and distances? **1:** 190 **11:** 117–118 **13:** 47 **25:** 53–54, 327, 331 **31:** 113 **39:** 133–134, 357 **285:** 81 **747:** 254 **753:** 159 **874:** 89–93
	(5) Keep itemized record of cost of planting.
9. Cultivate **how?**	(1) Shall you cultivate your lettuce with both horse and hand tools? **11:** 95–96, 101–107 **16:** 96–103 **25:** 35–37 **27:** 18, 52–56, 157–159 **39:** 358 **276:** 360 **853:** 112–113 **876:** 76–81
	(2) Keep items of cost of cultivation.
10. Shall you water?[1]	(1) What is "free" water? How far from the surface is the "free-water" level in your lettuce ground? **285:** 48–49 **289:** 45–46 **683:** 29
	(2) What is "capillary" water? Perform at least one experiment for observing the movement of "capillary water." **25:** 55–56 **285:** 44, Fig. 24; 48, Fig. 26, Fig. 27; 49–50, Fig. 28 **289:** 41 **681:** 40 **747:** 14 **762:** 80–85
	(3) What is "film" water. How much film surface should a cubic foot of clay loam particles have? **5:** 80 **285:** 50–52 **289:** 22–24 **581:** 4–5 **683:** 30 **747:** 10–12 **762:** 75–80
	(4) Where does all water come from? **5:** 61
	(5) What use does a plant make of water, and how does it take it from the soil? Perform an experiment for observing the process of "osmosis."[2] **5:** 64–67, 73 **285:** 39 **289:** 42–43 **298:** 64 **752:** 17–21 **768:** 16–19, 24 **772:** 201–204
	(6) What is the comparative water-absorbing power of different soils, including a good quality of garden soil? **285:** 45, Fig. 25
	(7) What quantities of water do different plants require for maturing their crops? **5:** 62–63, 67 **285:** 40
	(8) Does lettuce require much or little water for the quickest and best growth? **34:** 83 **39:** 358
	(9) What is meant by "watering with the hoe"? **5:** 85–86 **25:** 55–56 **876:** 102–103
	(10) Under what conditions, if at all, is it advisable to water after sowing lettuce seed? **25:** 56

[1] What part has water played in soil formation? **289:** 7–15 **681:** 10–14 **683:** 3, 11, 15 **685:** 74–108.

[2] What are "plasmolysis" and "wilting" of lettuce? **278:** 69, 80, 81.

Lettuce growing—Continued.

Guiding questions for planning this project.	Guiding questions for studying and understanding this project.
10. Shall you water—*Con.*	**(11) Why "never sprinkle"? When, how, and in what quantities should water be applied?** **1:** 190-191 **11:** 100 **13:** 22-23 **25:** 41, 104-107 **31:** 114 **876:** 104 **(12) Keep account of cost in time and equipment for watering.**
11. Protect from what plant enemies, and how?	**(1) What enemies attack the lettuce plant?** **A. Indoors or under glass?** **B. In the open?** **24:** 123 **25:** 71-72, 149 **26:** 226 **30:** 3-16 **39:** 356, 358 **274:** 273, 322 **276:** 361 **292:** 179-180 **768:** 102 **876:** 119 **(2) Which need you fear?** **(3) What protection against flea-beetle?** **25:** 71-72 **(4) Mice?** **39:** 356 **(5) Cut-worms?** **25:** 73, 76 **276:** 38 **558:** 47 **(6) Keep account of expense for protection in time and materials.**
12. How harvest, dispose of product, and balance the lettuce account?[1]	**(1) For family use? Credit received at market price?** **11:** 483 **13:** 35 **24:** 153 **26:** 224-225 **39:** 357 **(2) For sale? Blanched?** **11:** 484 **39:** 352, 358 **(3) What principles of salesmanship and accounting shall you put into practice?** **5:** 380-383 **39:** 162, 163 **276:** 214-224 **465:** 109-138, 130, 144, 145-197 **492:** 1-21, 22-41, 82-100, 143-152 **753:** 327-328 **761:** 154-160 **782:** 157, 159 **850:** 33, 35, 41, 42, 69, 72, 74, 77, 79, 87, 88, 92 **(4) Shall you keep a separate lettuce account, or include outlay and receipts in the account of the kitchen-gardening project as a whole?**

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[1] **How serve lettuce? Its place in an attractive and wholesome diet? 25:** 147-149, 182 **874:** 119-120.

Chapter IV.

AGRICULTURAL PROJECT STUDY BIBLIOGRAPHY.[1]

APPROVED FOR MASSACHUSETTS VOCATIONAL AGRICULTURAL SCHOOLS AND DEPARTMENTS.

The Massachusetts plan of vocational agricultural education of secondary grade depends for its best success upon the constant use, under the guidance of the instructors, of current agricultural papers and periodicals. It depends, also, upon the constant use of selected text, exercise, and reference books, bulletins, circulars, and reports.

In selecting the titles which appear in this chapter the advice of practical farmers and of experienced agricultural instructors has been sought and has been very generously given. Final responsibility, however, for the titles included rests with the writer. Text and reference materials have been carefully examined. Not a little material has been rejected as unsuitable for the purpose in hand. The lists are intended to be illustrative, not all-inclusive.

1. AGRICULTURAL PAPERS AND PERIODICALS.

Each Massachusetts vocational agricultural library should regularly receive the current agricultural literature. The pupils should, moreover, be encouraged to subscribe for those publications which promise to be most useful in their individual home work. Club rates may generally be secured where several persons subscribe together.

In order to place their literature regularly before the entire school or department, the publishers may be willing to send the literature gratis to the school or department libraries. This privilege should immediately be requested.

If library copies can not be secured gratis, they should be had by subscriptions paid annually from the maintenance funds of the school or department.

2. FREE BULLETINS, CIRCULARS, AND REPORTS.

(1) **The United States Bureau of Education** is closely following the development of vocational agricultural education of secondary grade. It has published much useful material, including Bulletin No. 481, a "Bibliography of Education in Agriculture and Home Economics." The agricultural instructors should apply on behalf of their school or department libraries for such of the free publica-

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[1] This chapter reproduces with some additions materials first published as Bulletin, No. 6, 1912, by the Massachusetts Board of Education.

tions of the bureau as bear upon vocational agricultural training in secondary schools.

Applications should be addressed to the United States Commissioner of Education, Washington, D. C.

(2) **The United States Department of Agriculture** issues many agricultural bulletins, circulars, and reports. Certain of these have directly to do with Massachusetts farming problems. Others deal with problems in other States, where the agricultural conditions closely approximate those in this State.

Access to this literature nearly up to date may be had by applying to the Division of Publications of the United States Department of Agriculture, Washington, D. C., for Circular 19, entitled "Publications of the Department of Agriculture classified for the Use of Teachers." This was issued under date of January 27, 1912. Access to later literature may be had by requesting that the "Monthly List of Publications" be sent the library of the school or department. Each agricultural instructor should apply for, and use, both Circular 19 and the regular issues of the "Monthly List."

Literature mentioned by Circular 19 and the "Monthly List" may usually be had free by applying for it to the Secretary of Agriculture, or to the Senator or Representative of the district in which the applicant works or resides.

(3) **The Agricultural Experiment Stations** also issue literature of value to progressive farmers, and therefore of value in the project method of training. In Connecticut and in New York there are two such stations; in every State there is at least one.

All of the New England and New York stations have kindly consented to put our vocational agricultural school and department libraries on their mailing lists. The literature they send should be carefully filed. Occasionally literature from the stations in other States may directly bear upon the productive projects undertaken by our boys. A sharp lookout should be kept for such literature.[1]

Such a lookout may be kept by means of the "Card Index of Experiment Station Literature," which is published by the United States Department of Agriculture. More than 30,000 cards have already been printed.[2] Each agricultural school and department

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[1] Each State should, of course, develop lists of reference materials specially suited to its own needs and available sources of information.

[2] In order to show the exact nature of the clews to station literature, pertinent in one respect or another to Massachusetts farming projects, which this card index affords, the subject matter on four cards is here printed.

Index Card 31806.

"Poultry appliances, labor-saving."—J. E. Rice and C. A. Rogers.

"*New York Cornell Bul. No. 284, Nov., 1910, pp. 51* ....

"Directions are given for the construction of inexpensive, unpatented labor-saving devices for poultry raising. They include feeding and watering devices, pedigree and egg-collecting appliances, catching and carrying devices, shipping packages, coops for sitting hens, fattening coops, a rack for sprouted oats, a burglar-alarm system, and an improved killing and picking box."

[Footnote continued on next page.]

library should endeavor to secure a partial set of these index cards. Since many of the bulletins referred to on the earlier cards are now out of print, it probably will be best to start the subscription at card 31500. The number of the sets at present is limited, but now and then a former subscriber relinquishes his rights, and a subscription may be allowed a school or department.

Subscriptions for divisions of this index, such as all cards dealing with "Poultry," "Fruit," and the like, cost $3 per thousand cards; with $1.25 additional, at the outset, for colored division cards to be used in arranging and readily consulting the index. Divisions may be subscribed for until full sets become available. The Office of Experiment Stations of the United States Department of Agriculture will receive the subscriptions for both sets and divisions.

A key to the index, containing the system of classification, is sent on application.

Make payments in advance by United States postal order in favor of A. Zappone, disbursing officer, and forward in envelopes addressed to the Director of the Office of Experiment Stations, Washington, D. C.

Footnote—Continued.

Index Card 31810.

"Milk pails, covered, tests."—H. A. Harding, J. K. Wilson, and G. A. Smith.

"*New York State Bul. No. 326, Dec., 1910, pp. 249–381, pls. 4*..

"A report of experiments to determine the effect on the germ content of using improved milk pails. More than one-half the infection that milk receives during the milking process can be prevented by use of a covered pail. Such a pail, less than 12 inches high and provided with an elliptical opening 7 by 5 inches, is practically as convenient for milk as the open pail. Such a cover can be placed on an open pail by any tinsmith at very little expense. This pail is inexpensive, durable, easily cleaned, and one of the most efficient in keeping bacteria out of milk."

Index Card 31831.

"Vegetable garden."—W. H. Wicks.

"*Idaho Bul. No. 69, Aug., 1910, pp. 49, figs. 10, dgms. 2*..

"The record for two years is given of a one-half acre vegetable garden established in the spring of 1908 on the horticultural grounds of the Idaho station. The value of the products in 1908 was $82.19, with net profits of $57.41; in 1909, $98.38, with net profits of $79.22. The conclusion is reached that by judicious arrangement of the gardens continuous supply of vegetables may be secured throughout the season. A plan is given of a farmer's vegetable garden, together with cultural suggestions on farm garden crops and recommended varieties."

Index Card 31943.

"Feeding experiments with pigs."—A. L. Stabler.

"*Maryland Bul. No. 150, Jan., 1911, pp. 93–120, fig. 1*..

"Pigs fed silage made faster gains than those fed ground fodder mixed with their feed. Young pigs made faster gains on corn meal and skim milk than on shelled corn and skim milk. Pigs fed mixed grain soaked 24 hours made faster and more economical gains than those fed the same mixture dry or fresh soaked. Chopped alfalfa failed to take the place of a part of the middlings in a ration consisting of shelled corn, wheat middlings, and skim milk. Soft coal in unlimited quantities seemed unharmful for pigs in pens. The use of a tonic mixture, wood charcoal and soft coal, as correctives increased gains. Other feeding tests are reported."

(4) **Massachusetts Agricultural Experiment Station literature,** of course, is covered by the card index above described. In order that there may be no delay, however, in securing such of its publications as may be needed at once, the following list of those now available is given:

Bulletins and their numbers—
33. Glossary of fodder terms.
76. The imported elm-leaf beetle.
115. Cranberry insects.
123. Fungicides, insecticides, and spraying directions.
125. Shade trees.
133. Green crops for summer soiling.
134. The hay crop.
137. The rational use of lime. Also, the Distribution, composition and cost of lime.
138. Tomato diseases.
139. Inspection of commercial feedstuffs (October, 1911).
140. Inspection of commercial fertilizers (December, 1911).

Technical bulletins—
2. The graft union.
3. The blossom end rot of tomatoes.

Circulars—
20. The use of lime in Massachusetts agriculture.
22. Poultry manures, their treatment and use.
26. Fertilizers for potatoes.
27. Seeding mowings.
29. Chemical analysis of soils.

Applications for these and future publications of like character should be addressed to the Director of the Massachusetts Agricultural Experiment Station, Amherst, Mass.

(5) **"Facts for farmers,"** issued monthly by the Extension Service of Massachusetts Agricultural College, is a live leaflet on timely topics which bear directly upon Massachusetts farming from season to season. A full file of these leaflets should be preserved for reference in each agricultural school and department library. Members of the agricultural classes, or their fathers, may receive copies for their individual files by asking that their names be put on the Extension Service mailing list.

Applications should be addressed to W. D. Hurd, Director of the Extension Service, Amherst, Mass.

(6) **The Massachusetts Board of Agriculture** publishes agricultural bulletins and reports, a complete file of which, beginning, say, January, 1910, should be at hand for reference. In addition to the annual volumes, the board of agriculture has printed such special bulletins as the following: 1. Poultry Culture. 2. Orcharding. 3. Grasses and Forage Crops. 4. Small Fruits and Berries. 5. Vegetable Growing.

Applications for its publications should be addressed to the State Board of Agriculture, State House, Boston, Mass. Copies may be had not only by the libraries, but also by individual agricultural students.

(7) **The State forester's** work closely concerns all farmers who are confronting the problems of protection against brown-tail and gypsy moth depredations, of protection against forest fires, and of economically cropping their wood or timber lots, and of disposing of lumber to their best advantage. Each agricultural school and department should keep a complete file of the State forester's publications. Most of these publications are fully illustrated and may be had by both the libraries and the individual agricultural students.

Following are some of the publications now available:

1. Forest trees of Massachusetts: How you may know them. A pocket manual.
3. Massachusetts wood-using industries.
4. The evergreens. Methods of study in public schools.
5. Reforestation in Massachusetts.
6. How and when to collect white pine seed.
7. Forest mensuration of the white pine. How to estimate standing timber.
8. How to make improvement thinnings.
10. Forest fire-fighting equipment in our towns.
11. Gypsy and brown-tail moths.
14. Colored plates of the gypsy and brown-tail moths and calosoma beetle.

—. The chestnut bark disease.

Applications for these and future publications should be addressed to the State Forester, 6 Beacon Street, Boston, Mass.

3. TEXT, EXERCISE, AND REFERENCE BOOKS, BULLETINS, CIRCULARS, AND REPORTS.

Copies of the books, bulletins, circulars, and reports hereafter listed are on file in the agricultural library of the Massachusetts Board of Education, where they may be examined by school officers. Where vocational agricultural school and department work is started certain copies should be provided at the outset. These are necessary parts of an approved equipment for the present year. Others may be added in succeeding years, until an adequate working library has been established.[1]

(1) **Instructor's aid necessary.**—It is, of course, understood that the following lists are for the convenience of the several instructors, and for use by classes, with the help, step by step, of these instructors. Reference materials, therefore, suited to minds of different grades of maturity have been included. Some have been successfuly used in elementary schools; others, by secondary schools, and even by college classes. The instructor's intimate knowledge of the needs and mental capabilities of his individual boys will determine his assignment of both laboratory exercises and reading matter.

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[1] Prof. G. F. Warren, "Elements of Agriculture," pp. 402, 403 (see below, No. 5), lists a foundation set of secondary school agricultural reference books purchasable for about $50.

(2) **Lists subject to revision.**—It is to be expected that from time to time additions to these lists will need to be made. Suggestions as to usable additions are earnestly solicited. The instructors are especially requested to report which of the entries here included prove best suited to their different classes. The most competent revision of these lists will thus be assured.

(3) **Prices and estimates.**—Postage or express charges must be added where prices are marked "net." For example, "The Country-life Movement," by Prof. L. H. Bailey, is listed as follows: "$1.25 net; by mail, $1.34." Discounts from prices not marked "net" may usually be expected.

(4) **Student purchases.**—Prof. L. H. Bailey, in addressing winter short-course students at the Cornell Agricultural College, is reported to have said that he hoped, if they took nothing else home, they would take home with them ten or twelve dollars' worth of good books dealing with the branches of practical agricultural production which they expected to follow. A similar hope might well be expressed on behalf of the boys who seek vocational agricultural school training such as that described in this bulletin.

Fortunately a few most excellent books for home guidance in profitable farm work are now to be had at moderate cost. The agricultural instructors may properly enough seek to stimulate the boys in their classes to purchase one or more such books every year. Wise guidance may be given by observing which books actually prove to be most useful to the individual boys in carrying out their particular home farm projects.

Publishers will undoubtedly be very willing to allow the boys their most favorable school discounts, especially if orders are forwarded through the school purchasing agent.

(5) **Reference numbers.**—The Arabic numbers at the left of the entries are for convenience in referring to materials found in this bibliography.[1]

A. Library arrangement.—If these numbers are put on the backs of the books, on the fronts of the pamphlet cases in which bulletins are filed and on the shelves where sets of reports are kept, it will not be necessary to consult these printed lists in using the agricultural library. The student or instructor may go directly to the materials themselves, on the library shelves. In cases where schools already have libraries and systems of numbering, these special numbers may be added.

B. Project outlines.—In the outlines for project instruction found in Chapter III the following entries are referred to by number, not by title.[1] The instructors in their future outline making may also find it most convenient to use these numbers. This will save both time and space.

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[1] A similar use of numbers for ready reference has been made in "Laboratory Exercises in Farm Management," by Warren and Livermore.

C. Library card indexes.—At the pleasure of the school officers, card indexes by authors and by titles may be made. The author index may then be arranged alphabetically by names; and the title index may be alphabetically arranged by subjects, such as "Dairying," "Vegetable Growing," and "Fruit Growing." In such a case, the books, bulletins, and reports themselves would remain in the numerical order here adopted, and each card would bear the number assigned the particular title in these lists. Any book, for example, could thus be found instantly; and, after use, could be returned to its proper place by simply looking at its number.

D. Future entries.—Gaps in the numbering have been left for the possible addition of future entries. Missing numbers, however, will occasion no confusion. The simple numerical order may determine the arrangement, even though now and then a gap may appear between entries. After the vacant numbers have all been assigned, still further additions may be made at will by aid of points. Next entry numbers may then be written, for exampie, as follows: 4.1, 4.2, etc., or 9.1, 9.2, etc., or 49.1, 49.2, 49.3, etc.

(6) **Reference letters.**—The letters following the titles refer to the corresponding letters at the left of the names of the publishers of the respective entries. Needless repetition of the full names and addresses of publishers is thus avoided. A complete list of the publishers and their addresses immediately follows the reference lists. (See pp. 93–94.)

(7) **State help and approval.**—The agent of the board of education for agricultural education will from year to year advise Massachusetts instructors who need his help in making approved selections from these lists, and in the numbering, indexing, and arrangement of agricultural library materials.

4. AGRICULTURAL PROJECT STUDY BIBLIOGRAPHY, ARRANGED FOR READY REFERENCE.[2]

I. *Text-books approved for first and second year agricultural survey.*[3]

1. Mann, A. R. Beginnings in agriculture. (N[4]) 60 cents net.

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2. Mayne and Hatch. High-school agriculture. (BBB)

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[1] See Bulletins of the Board of Education, No. 5, 1912, and No. 9, 1913.

[2] Where more than one entry appears under the headings marked by Romal numerals, the entries above the dotted lines are arranged alphabetically by authors, by States, or by governments, divisions, bureaus, or offices. Space below the dotted lines is reserved for additions to the original entries which have been, or may be made from time to time.

[3] The textbooks named were chosen for Massachusetts schools. They are not necessarily the best for all other States.

[4] The letters in parentheses are those assigned the various publishers. For the list of publishers and their addresses to which these letters refer, see pp. 93-94.

II. *Text-books approved for third and fourth year agricultural survey.*[1]

5. Warren, G. F. Elements of agriculture. (N) $1.10 net.

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6. Warren, G. F. Farm management. (N)
7. Harper, M. W. Animal husbandry for schools. (N)[2]

III. *For first and second year study of projects in—*

1. *Vegetable growing.*

10. Allen, C. L. Cabbages, cauliflower, etc. (O) 50 cents.
11. Bailey, L. H. Manual of gardening. (N) $2 net.
12. Beattie, W. R. Celery (Farmers' Bul. 282). (Bb)
13. Beattie, W. R. The home vegetable garden (Farmers' Bul. 255). (Bb)
14. Beattie, W. R. Home production of onion seed and sets (Farmers' Bul. 434). (Bb)
15. Beattie, W. R. Onion culture (Farmers' Bul. 354). (Bb)
16. Bennett, Ida D. The vegetable garden. (P) $1.50 net.
17. Corbett, L. C. Beans (Farmers' Bul. 289). (Bb)
18. Corbett, L. C. Cabbage (Farmers' Bul. 433). (Bb)
19. Corbett, L. C. Cucumbers (Farmers' Bul. 254). (Bb)
20. Corbett, L. C. Tomatoes (Farmers' Bul. 220). (Bb)
21. Duggar, B. M. The cultivation of mushrooms (Farmers' Bul. 204). (Bb)
22. Duggar, J. F. Potato culture (Farmers' Bul. 35). (Bb)
23. Fraser, Samuel. The potato. (O) 75 cents.
24. French, Allen. How to grow vegetables. (N) $1.75 net.
25. Fullerton, E. L. How to make a vegetable garden. (P) $2 net.
26. Green, Samuel B. Vegetable gardening. (Q) $1.
27. Greiner, T. How to make the garden pay. (R) $1 net.
28. Handy, R. B. Asparagus culture (Farmers' Bul. 61). (Bb)
29. Hexamer, F. M. Asparagus. (O) 50 cents.
30. Kirkland, A. H. Usefulness of the American toad (Farmers' Bul. 196). (Bb)
31. Massachusetts. Vegetable growing (Mass. State Bd. of Agr. Bul. 5). (C)
32. Morse, J. E. The new rhubarb culture. (O) 50 cents.
33. Rexford, E. E. The home garden. (S) $1.25 net.
34. Roberts, Harry. The beginner's book of gardening. (T) $1 net.
35. Schoene, W. J. Cabbage seed beds, protection (N. Y. State Bul. 334). (L)
36. Sevey, G. C. Bean culture. (O) 50 cents.
37. Sevey, G. C. Peas and pea culture. (O) 50 cents net.
38. Vilmorin-Andrieux. The vegetable garden. (U) $3.75 net.
39. Watts, R. L. Vegetable gardening. (O) $1.75 net.
40. Wicks, W. H. Vegetable garden. (V)

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41. Meier, W. H. D. School and home gardens. (CC)
42. Grubb & Guilford. The potato. (P)

2. *Small-fruit growing.*

(See also Reference No. 41.)

50. Card, Fred W. Bush fruits. (N) $1.50 net.
51. Corbett, L. C. Cranberry culture (Farmers' Bul. 176). (Bb)
52. Corbett, L. C. The home fruit garden preparation and care (Farmers' Bul. 154). (Bb)
53. Corbett, L. C. Pruning (Farmers' Bul. 181). (Bb)
54. Corbett, L. C. Raspberries (Farmers' Bul. 213). (Bb)

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[1] The textbooks named were chosen for Massachusetts schools. They are not necessarily the best for all other States.

[2] One of the entries added after publication of the original list. See above (5), D, also foregoing footnote on p. 75.

55. Corbett, L. C. Strawberries (Farmers' Bul. 198). (Bb)
56. Green, S. B. Popular fruit growing. (Q) $1.
57. Husmann, G. C. Grape propagation, pruning, and training (Farmers' Bul. 471). (Bb)
58. Massachusetts. Small fruits and berries (Mass. State Bd. of Agr. Bul. 4). (C)
59. Maynard, S. T. Successful fruit culture. (O) $1.
60. Ragan, W. H. The home vineyard, with special reference to northern conditions (Farmers' Bul. 156). (Bb)
61. Ragan, W. H. Varieties of fruits recommended for planting (Farmers' Bul. 208). (Bb)
62. Rhode Island. Bush fruits (R. I. Exp. Sta. Bul. 91). (M)
63. Waugh, F. A. Fruit: Harvesting, storing, and marketing. (O) $1.
64. White, J. J. Cranberry culture. (O) $1.

3. Beekeeping.

70. Benton, Frank. Beekeeping (Farmer's Bul. 59). (Bb)
71. Comstock, A. B. How to keep bees. (P) $1.
72. Phillips, E. F. Bees (Farmers' Bul. 447). (Bb)
73. Root, A. I. and E. R. The A B C and X Y Z of bee culture. (W) $1.50 net.

4. Poultry keeping.

80. American Poultry Association. The American standard of perfection. (X)
81. Beale, Stephen. Profitable poultry keeping. (Y) $1.
82. Bell, G. A. Poultry management (Farmers' Bul. 287). (Bb)
83. Boyer, M. K. Money in broilers and squabs. (Z) 50 cents.
84. Brigham, A. A. Progressive poultry culture. (AA) $1.50 net.
85. Brown, Edward. Poultry keeping as an industry for farmers and cottagers. (BB) 6s.
86. Connecticut. Water glass: A preservative for eggs (Storrs Bul. 67). (H)
87. Howard, G. E. Standard varieties of chickens (Farmers' Bul. 51). (Bb)
88. Howard, G. E. Ducks and geese: Standard varieties and management (Farmers' Bul. 64). (Bb)
89. Langworthy, C. F. The guinea fowl and its use as food (Farmers' Bul. 234). (Bb)
90. Massachusetts. Poultry culture. (C)
91. McGrew, T. F. Turkeys (Farmers' Bul. 200). (Bb)
92. Pearl, Raymond. Methods of poultry management at the Maine Agricultural Experiment Station. (Bb)
93. Powell, E. C. Making poultry pay. (O) $1.
94. Rhode Island. The rearing and management of turkeys, with special reference to the blackhead disease (R. I. Exp. Sta. Bul. 123). (M)
95. Rice, Wm. E. Squab raising (Farmer's Bul. 177). (Bb)
96. Robinson, J. H. Principles and practice of poultry culture. (CC) $2 net.
97. Sands, R. B. American poultry culture. (MMMM) $1.25.
98. Slocum, R. R. Capons and caponizing (Farmers' Bul. 452). (Bb)
99. Slocum, R. R. Marketing eggs through the creamery (Farmers' Bul. 445). (Bb)
100. Stoddard, H. H. The new egg farm. (O) $1.
101. Valentine, C. S. How to keep hens for profit. (N) $1.50 net.
102. Watson, G. C. Farm poultry. (N) $1.25 net.
103. Wood, R. H. Incubation and incubators (Farmers' Bul. 236). (Bb)
104. Wright, Lewis. The practical poultry keeper. (DD) 87 cents.

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105. Howard & McGrew. Perfected poultry. (PPPP)
106. Lewis, H. R. Productive poultry husbandry. (S)
108. Robinson, J. H. Poultry craft. (QQQQ)
109. Various authors. The poultry book. (P)

5. *Sheep and goat husbandry.*

110. Craig, J. A. Sheep feeding (Farmers' Bul. 49). (Bb)
111. Curtiss, C. F. Raising sheep for mutton (Farmers' bul. 96). (Bb)
112. Thompson, G. F. The angora goat (Farmers' Bul. 137). (Bb)
113. Wing, J. E. Sheep farming in America. (EE) $1.
114. Wing, J. E., *et al.* The winter lamb. (FF)

6. *Swine husbandry.*

120. Coburn, F. D. Swine in America. (O) $2.50 net.
121. Craig, R. A. Diseases of swine. (O) 75 cents.
122. Dietrich, Wm. Swine. (GG) $1.50
123. Rommel, G. M. Pig management (Farmer's Bul. 205). (Bb)

7. *Ornamental planting.*

(See also References Nos. 34, 41.)

130. Bennett, I. D. The flower garden. (P) $1.10 net.
131. Corbett, L. C. Annual flowering plants (Farmers' Bul. 195). (Bb)
132. Corbett, L. C. Beautifying the home grounds (Farmer's Bul. 185). (Bb)
133. Corbett, L. C. The lawn (Farmers' Bul. 248). (Bb)
134. Ely, H. R. The practical flower garden. (N) $2.
135. Fernow, B. E. The care of trees in lawn, street, and park. (HH) $2.
136. Hall, Wm. L. Tree planting on rural school grounds (Farmers' Bul. 134). (Bb)
137. Howard, L. O. Three insect enemies of shade trees (Farmers' Bul. 99). (Bb)
138. Kirkgaard, John. A guide for the gardener. (II) $2.50 net.
139. Maynard, S. T. Landscape gardening as applied to home decoration. (JJ) $1.50.
140. Miller, Wilhelm. What England can teach us about gardening. (P) $4 net.
141. Pinchot, Gifford. Arbor day (U. S. Forest Service Circ. 96). (Bg)
142. Sedgwick, Mabel C. The garden month by month. (KK) $4.04 net.
143. Start, E. A., *et al.* Shade trees. (D)
144. Waugh, F. A. Landscape gardening. (O) 50 cents.

IV. *For third and fourth year study of projects in—*

1. *Animal husbandry.*

(See also references above, No. 70f, No. 80f, No. 110f, and No. 120f.)

150. Adams, J. W. Horseshoeing (Farmers' Bul. 179). (Bb)
151. Alvord, H. E. Breeds of dairy cattle (Farmers' Bul. 106). (Bb)
152. Alvord, H. E. The dairy herd: Its formation and management (Farmers' Bul. 55). (Bb)
153. Brooks, W. P. The hay crop (Mass. Agr. Exp. Sta. Bul. 134). (D)
154. Brooks, W. P. Seeding mowings (Mass. Agr. Exp. Sta. Circ. 27). (D)
155. Brown, Edgar. Alfalfa seed (Farmers' Bul. 194). (Bb)
156. Brown, E., *et al.* Seed of red clover and its impurities (Farmers' Bul. 260). (Bb)
157. Carrier, L. Cost of filling silos (Farmers' Bul. 292). (Bb)
158. Clinton, L. A. Corn growing in New England (Mass. State Bd. of Agr.). (C)
159. Coburn, F. D. Alfalfa. (O) 50 cents.
160. Connecticut. Quality of milk affected by common dairy practices (Storrs Bul. 42). (H)
161. Connecticut. Milking machines (Storrs Bul. 47). (H)
162. Craig, J. A. Judging live stock. (LL) $1.50.
163. Derr, H. B. Barley: Growing the crop (Farmers' Bul. 443). (Bb)
164. Dondlinger, P. T. The book of wheat. (O) $2 net.
165. Duvel, J. W. T. The germination of seed corn (Farmers' Bul. 253). (Bb)

166. Gurler, H. B. The farm dairy. (EE) $1.
167. Hartley, C. P. Corn growing (Farmers' Bul. 199). (Bb)
168. Hartley, C. P. Corn cultivation (Farmers' Bul. 414). (Bb)
169. Hartley, C. P. Harvesting and storing corn (Farmers' Bul. 313). (Bb)
170. Hartley, C. P. The production of good seed corn (Farmers' Bul. 229). (Bb)
171. Hartley, C. P. Seed corn (Farmers' Bul. 415). (Bb)
172. Hickman, R. W. The dehorning of cattle (Farmers' Bul. 350). (Bb)
173. Hillman, F. H. The adulteration of forage plant seeds (Farmers' Bul. 382). (Bb)
174. Illinois. Four systems of dairy farming and the profit on each (University of Ill. Circ. 151). (MM)
175. Johnstone, J. H. S. The horse book. (EE) $2.
176. Lane, C. B. Business of dairying. (O) $1.25 net.
177. Langworthy, C. F. Principles of horse feeding (Farmers' Bul. 170). (Bb)
178. Lindsey, J. B. Green crops for summer soiling (Mass. Agr. Exp. Sta. Bul. 133). (D)
179. Lyon and Montgomery. Examining and grading grains. (CC) 48 cents net.
180. Maine. Practical horticulture. Red clover (Maine Bul. 113). (I)
181. Massachusetts. Grasses and forage crops (Mass. St. Bd. of Agr. Bul. 3). (C)
182. Michels, John. Dairy farming. (NN) $1.
183. Moore, G. T., *et al.* Beneficial bacteria for leguminous crops (Farmers' Bul. 214). (Bb)
184. Myrick, Herbert. The book of corn. (O) $1.50.
185. Oakley, R. A. Canada bluegrass (Farmers' Bul. 402). (Bb)
186. Piper, C. V. Leguminous crops for green manuring (Farmers' Bul. 278). (Bb)
187. Plumb, C. S. Indian corn culture. (EE) $1.
188. Plumb, C. S. Silos and silage (Farmers' Bul. 32). (Bb)
189. Plumb, C. S. Types and breeds of farm animals. (CC) $1.60 net.
190. Rhode Island. Corn selection (R. I. Exp. Sta. Bul. 116). (M)
191. Roberts, I. P. The horse. (N) $1.25 net.
192. Saunders, W. D., *et al.* Dairy herd records (Virginia Bul. 190). (OO)
193. Shaw, Thos. Canadian field peas (Farmers' Bul. 224). (Bb)
194. Shaw, Thos. Rape plant, its history, culture, and uses (Farmers' Bul. 11). (Bb)
195. Shaw, Thos. Clovers. (O) $1 net.
196. Shaw, Thos. Forage crops other than grasses. (O) $1.
197. Shaw, Thos. Grasses and how to grow them. (Q) $1.50.
198. Shaw, Thos. Soiling crops and the silo. (O) $1.50.
199. Van Norman, H. E. First lessons in dairying. (O) 50 cents net.
200. Vinall, H. N. Meadow fescue (Farmers' Bul. 361). (Bb)
201. Voorhees, Ed. B. Forage crops. (N) $1.50 net.
202. Warburton, C. W. Oats: Growing the crop (Farmers' Bul. 424). (Bb)
203. Warburton, C. W. Oats—Sixty Day and Kherson (Farmers' Bul. 395). (Bb)
204. Westgate, J. M. Alfalfa (Farmers' Bul. 339). (Bb)
205. Westgate, J. M., *et al.* Red clover (Farmers' Bul. 455). (Bb)
206. Williams, T. A. Millets (Farmers' Bul. 101). (Bb)
207. Zintheo, C. J. Corn-harvesting machinery (Farmers' Bul. 303). (Bb)

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208. Harper, M. W. Training and breaking of horses. (N) $1.75.
209. Rose, Laura. Farm dairying. (MMMM) $1.25.
210. Harper, M. W. Manual of farm animals. (N)
211. Willoughby, T. F. The golden stream. (RRRR)
212. Eckles, C. H. Dairy cattle and milk production. (N)
213. Sheldon, J. P. The farm and dairy. (SSSS)
214. Montgomery, E. G. Corn crops. (N) $1.60.

2. *Fruit growing.*

(See also references under III, 2.)

220. Bailey, L. H. The nursery book. (N) $1.50 net.
221. Bailey, L. H. The principles of fruit growing. (N) $1.50 net.
222. Bailey, L. H. The pruning book. (N) $1.50 net.
223. Brackett, G. B. The apple and how to grow it (Farmers' Bul. 113). (Bb)
224. Connecticut. Apple growing in New England, Parts I and II (Storrs Bul. 61). (H)
225. Connecticut. Apple growing in New England, Part III (Storrs Bul. 62). (H)
226. Connecticut. Apple growing in New England, Part IV (Storrs Bul. 66). (H)
227. Massachusetts. Orcharding (Mass. State Bd. of Agr. Bul. 2). (C)
228. Moore, J. G. Orchards, management (Wisconsin Bul. 201). (PP)
229. Nielsen, H. T. Cowpeas (Farmers' Bul. 318). (Bb)
230. Piper, C. V., *et al.* Soy beans (Farmers' Bul. 372). (Bb)
231. Rhode Island. Improving an orchard (R. I. Exp. Sta. Bul. 83). (M)
232. Thomas, J. J. The American fruit culturist. (O) $2.50 net.
233. Waugh, F. A. The American apple orchard. (O) $1 net.
234. Wolverton, L. The Canadian apple grower's guide. (QQ) $2 net

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235. Waugh, F. A. Beginner's guide to fruit growing.

3. *Market gardening.*

(See also references under III, 1.)

250. Bailey, L. H. The forcing book. (N) $1.25 net.
251. Beattie, W. R. Celery culture. (O) 50 cents.
252. Beattie, W. R. Frames as a factor in truck growing (Farmers' Bul. 460). (Bb)
253. Corbett, L. C. The potato as a truck crop (Farmers' Bul. 407). (Bb)
254. Rawson, Herbert. Success in market gardening. (P) $1.10.
255. Rhode Island. Soil treatment in greenhouse culture (R. I. Exp. Sta. Bul. 107). (M)
256. Rhode Island. A further study of soil treatment in greenhouse culture (R. I. Exp. Sta. Bul. 128). (M)
257. Taft, L. R. Greenhouse construction. (O) $1.50.
258. Taft, L. R. Greenhouse management. (O) $1.50.

V. For laboratory exercises and scientific data bearing upon the productive projects undertaken.

Intended to be supplementary to the entries above given and to be drawn upon as occasion permits or demands. Arrangement alphabetical.

1. *Agriculture in general.*

270. Bailey, L. H. Cyclopedia of American agriculture: Farms, Vol. I. (N) $5 net.
271. Bailey, L. H. Cyclopedia of American agriculture: Crops, Vol. II. (N) $5 net.
272. Bailey, L. H. Cyclopedia of American agriculture: Animals, Vol. III. (N) $5 net.
273. Bailey, L. H. Cyclopedia of American agriculture: Farm and community, Vol. IV. (N) $5 net.
274. Bailey, L. H. Farm and garden rule book. (N) $2.
275. Bailey, L. H. Principles of agriculture. (N) $1.25 net.
276. Bailey, L. H. Principles of vegetable gardening. (N) $1.50 net.
277. Boss, Andrew. Meat on the farm (Farmers' Bul. 183). (Bb)
278. Brooks, W. P. Agriculture: Soils, Vol. I. (RR) $1.25.
279. Brooks, W. P. Agriculture: Manures, fertilizers, and farm crops, Vol. II. (RR) $1.25.
280. Brooks, W. P. Agriculture: Animal husbandry. (RR) $1.25.

281. Davenport, E. Domesticated animals and plants. (CC) $1 net.
282. Dorset, M. Some common disinfectants (Farmers' Bul. 345). (Bb)
283. Ewell, E. E. Every farm an experiment station (U. S. Dept. of Agr. Yearbook, 1897). (B)
284. Garriot, E. B. Notes on frost (Farmers' Bul. 104). (Bb)
285. Goodrich, C. L. The first book of farming. (P) $1 net.
286. Hunt, T. F. The cereals of America. (O) $1.75.
287. Hunt, T. F. Forage and fiber crops in America. (O) $1.75.
288. Lantz, D. E. How to destroy rats (Farmers' Bul. 369). (Bb)
289. Massey, W. F. Practical farming. (MMMM) $1.50 net.
290. Voorhees, E. B. First principles of agriculture. (TT) 60 cents net.
291. Warburton, C. W. Oats: Distribution and uses (Farmers' Bul. 420). (Bb)
292. Wilcox, E. V. Farmers' cyclopedia of agriculture. (O) $3.50.
293. Williams, F., jr. Clearing new land (Farmers' Bul. 150). (Bb)

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294. Hopkins, C. G., *et al.* For better crops. (RRRR)

2. Alcohol, industrial.

300. Wente, A. O., *et al.* Potato culls as a source of industrial alcohol (Farmers' Bul. 410). (Bb)
301. Wiley, H. W. Industrial alcohol: Sources and manufacture (Farmers' Bul. 268). (Bb)
302. Wiley, H. W. Industrial alcohol: Uses and statistics (Farmers' Bul. 269). (Bb)
303. Wiley, H. W., *et al.* Industrial alcohol (Farmers' Bul. 429). (Bb)

3. Animal diseases.

310. Connecticut. Bacillary white diarrhea of young chicks, second report (Storrs Bul. 68). (H)
311. Dorset, M. Hog cholera (Farmers' Bul. 379). (Bb)
312. Maine. Poultry diseases (Maine, Bul. 398). (I)
313. Mayo, N. S. Diseases of animals. (N) $1.50 net.
314. Mayo, N. S. Diseases of pigs (Virginia Bul. 189). (OO)
315. Mohler, J. R. Milk fever: Its simple and successful treatment (Farmers' Bul. 206). (Bb)
316. Mohler, J. R. The tuberculin test of cattle for tuberculosis (Farmers' Bul. 351). (Bb)
317. Phillips, E. F. The treatment of bee diseases (Farmers' Bul. 422). (Bb)
318. Reynolds, M. H. Veterinary studies for agricultural students. (N) $1.75 net.
319. Rhode Island. A biological study of 11 pathogenic organisms from cholera-like diseases in poultry (R. I. Exp. Sta. Bul. 146). (M)
320. Rhode Island. Blackhead in turkeys: A study in avian coccidiosis (R. I. Exp. Sta. Bul. 141). (M)
321. Rhode Island. Further experiments in connection with the blackhead disease (R. I. Exp. Sta. Bul. 124). (M)
322. Rhode Island. Goose septicemia (R. I. Exp. Sta. Bul. 86). (M)
323. Salmon, D. E. Diseases of poultry. (UU) 60 cents net.
324. Salmon, D. E. Scab in sheep (Farmers' Bul. 159). (Bb)
325. United States. Tuberculosis (Farmers' Bul. 473). (Bb)

4. Animal foods and feeding.

335. Allen, E. W. The feeding of farm animals (Farmers' Bul. 22). (Bb)
336. Armsby, H. P. The computation of rations for farm animals by the use of energy value (Farmers' Bul. 346). (Bb)
337. Burns, J. C. Feeding experiments with pigs (Texas Bul. 131). (VV)

338. Connecticut. Pig-feeding experiments (Storrs Bul. 39). (H)
339. Connecticut. The facility of digestion of foods a factor in feeding (Storrs Bul. 43). (H)
340. Connecticut. The cost of feeding heifers (Storrs Bul. 63). (H)
341. Esten, W. M., *et al.* Silage fermentation (Storrs Bul. 70). (H)
342. Henry, W. A. Feeds and feeding. (WW) $2 net.
343. Holland, E. B. Glossary of fodder terms (Hatch Exp. Sta. Bul. 33). (D)
344. Jeffrey, J. S. Feeding experiments with poultry (N. C. College Agr. Exp. Sta. Bul. 211). (XX)
345. Jordan, W. H. The feeding of animals. (N) $1.50 net.
346. Rhode Island. Feeding experiments with chickens, cockerels, and turkeys (Agr. Exp. Sta. Bul. 126). (M)
347. Rice, J. E., *et al.* Feeding experiments with young chickens (Cornell Bul. 282). (K)
348. Shaw, Thos. Feeding farm animals. (O) $2.
349. Smith, P. H., *et al.* Inspection of commercial feedstuffs (Mass. Agr. Exp. Sta. Bul. 139). (D)

5. Animal life, propagation and tests.

360. Kellogg, V. L. Animals. (YY) $1.80 net.
361. Jordan, D. S., *et al.* Animal studies. (YY) $1.25 net.
362. Oldys, H. Pheasant raising in the United States (Farmers' Bul. 390). (Bb)
363. Punnett, R. C. Mendelism. (N) $1.25.
364. Shaw, Thos. Animal breeding. (O) $1.50.
365. Stabler, A. L. Feeding experiments with pigs (Md. College Park Agr. Exp. Sta. Bul. 150). (ZZ)

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366. Peabody and Hunt. Elementary biology: Animal and human. (N)

6. Bacteriology, agricultural.

370. Conn, H. W. Agricultural bacteriology. (AAA) $2 net.
371. Conn, H. W. Bacteria in milk and its products. (AAA) $1.50 net.
372. Conn, H. W. Practical dairy bacteriology. (O) $1.25.
373. Connecticut. Bacterium lactis acidi and its sources (Storrs Bul. 59). (H)
374. Connecticut. Comparative studies with covered milk pails (Storrs Bul. 48). (H)
375. Harding, H. A., *et al.* Milk pails, covered, tests (N. Y. State Bul. 326). (L)
376. Lipman, J. G. Bacteria in relation to country life. (N) $1.50 net.
377. Rogers, L. A. Bacteria in milk (Farmers' Bul. 348). (Bb)

7. Birds and agriculture.

385. Beal, F. E. L. Some common birds in their relation to agriculture (Farmers' Bul. 54). (Bb)
386. Dearborn, Ned. How to destroy English sparrows (Farmers' Bul. 383). (Bb)
387. Forbush, E. H. Useful birds and their protection (Mass. Bd. of Agr.). (C)
388. McAtee, W. L. Our grosbeaks and their value to agriculture (Farmers' Bul. 456). (Bb)

8. Botany and plant physiology.

395. Andrews, E. F. Practical course in botany. (BBB) $1 net.
396. Bergen, J. Y., *et al.* Practical botany. (CC) $1.04 net.
397. Coulter, J. M. Plant structures. (YY) $1.20 net.
398. Duggar, B. M. Plant physiology. (N) $1.60 net.
399. Percival, J. Agricultural botany. (HH) $2.50 net.
400. Stevens, W. C. Introduction to botany. (CCC) $1.50 net.

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401. Atkinson, F. A. Botany. (HH)

9. Chemistry and agriculture.

405. Hart, E. B., *et al.* General agricultural chemistry. (DDD) $1.50.
406. Storer, F. H. Agriculture in some of its relations with chemistry, Vol. I. (EEE) $5 for set of three volumes.
407. Storer, F. H. Agriculture in some of its relations with chemistry, Vol. II. (EEE) $5 for set of three volumes.
408. Storer, F. H. Agriculture in some of its relations with chemistry, Vol. III. (EEE) $5 for set of three volumes.
409. Warington, R. The chemistry of the farm. (FFF) $1.13.
410. Williams, R. P. Elements of chemistry. (CC) 88 cents net.

10. Construction and repairs: Plans, materials, tests, etc.

415. Alleman, G. Quantity and character of creosote in well-preserved timbers (Forest Service Circ. 98). (Bg)
416. Atwood, H. Poultry houses, construction (W. Va. Bul. 130). (GGG)
417. Beattie, W. R. The repair of farm equipment (Farmers' Bul. 347). (Bb)
418. Cobleigh, R. Handy farm devices. (O) $1.50 net.
419. Breeders' Gazette. Farm buildings. (GG) $2.
420. Corbett, L. C. Ice houses (Farmers' Bul. 475). (Bb)
421. Cushman, A. S. The corrosion of fence wire (Farmers' Bul. 239). (Bb)
422. Davidson and Chase. Farm buildings. (NNNN) $2.
423. Fiske, G. B. Poultry appliances and handicrafts. (NNNN) 50 cents.
424. Fiske, G. B. Poultry architecture. (NNNN) 50 cents.
425. Hasluck, P. N. Harness making. (NNNN)
426. Hasluck, P. N. Knotting and splicing. (NNNN)
427. Hasluck, P. N. Saddlery. (NNNN)
428. Hill, G. G. Farm buildings, practical suggestions for (Farmers' Bul. 126). (Bb)
429. Holmstrom, J. G. Standard blacksmithing, horseshoeing, and wagon making. (Q) 50 cents.
430. Orange Judd Co. Barn plans and outbuildings. (O) $1.
431. Rice, J. E., *et al.* Poultry appliances, labor-saving (Cornell Bul. 284). (K)
432. Stabler, A. L. Hog houses, description. (ZZ)
433. United States. The construction of concrete fence posts (Farmers' Bul. 403). (Bb)
434. United States. The use of concrete on the farm (Farmers' Bul. 461). (Bb)
435. Walker, P. H. The use of paint on the farm (Farmers' Bul. 474). (Bb)
436. Warren, J. A. Hog houses (Farmers' Bul. 438). (Bb)
437. Willis, C. P. The preservative treatment of farm timbers (Farmers' Bul. 387). (Bb)
438. Wormeley, P. L. Cement mortar and concrete: Preparation and use for farm purposes (Farmers' Bul. 235). (Bb)

11. Dairy products and manufactures.

445. Alvord, H. E. Cheese making on the farm (Farmers' Bul. 166). (Bb)
446. Connecticut. The camembert type of soft cheese in the United States (Storrs Bul. 35). (H)
447. Connecticut. Directions for making the camembert type of cheese (Storrs Bul. 46). (H)
448. Farrington and Woll. Testing milk and its products. (HHH) $1.25.
449. Mortensen, M. Creamery bookkeeping (Iowa Bul. 121). (III)
450. Trueman, J. M. Butter making on the farm (Storrs Bul. 65). (H)
451. Van Slyke, L. L. Modern methods of testing milk and milk products. (O) 75 cents.

452. Washburn, R. M. Ice-cream making, principles and practice (Vermont Bul. 155). (JJJ)
453. Webster, E. H. Butter making on the farm (Farmers' Bul. 241). (Bb)
454. Wing, H. H. Milk and its products. (N) $1.50 net.

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455. Snyder, H. Dairy chemistry. (N)
456. Barthel, Chr. Milk and dairy products. (N) $2.25.
457. McKay and Larson. Principles and practice of butter making.

12. Farm management and rural economics.

Accounts, statistics, etc.

460. Andrews, F. Costs of hauling crops from farms to shipping points (Bureau of Stat. Bul. 49). (Bc)
461. Arnold, J. H. How a city family managed a farm (Farmers' Bul. 432). (Bb)
462. Blodgett, J. H. Relations of population and food products in the United States, etc. (Div. of Stat. Bul. 24). (Bd)
463. Blodgett, J. H. Wages of farm labor in the United States (Bureau of Stat. Bul. 26). (Bc)
464. Burritt, M. C. A successful New York farm (Farmers' Bul. 454). (Bb)
465. Card, F. W. Farm management. (P) $2 net.
466. Carrier, L. A profitable tenant dairy farm (Farmers' Bul. 280). (Bb)
467. Carver, T. N. Principles of rural economics. (CC) $1.04 net.
468. Clark, C. C. Wheat crops of the United States, 1866–1906 (Bureau of Stat. Bul. 57). (Bc)
469. Clark, C. C. Oat crops of the United States, 1866–1906 (Bureau of Stat. Bul. 58). (Bc)
470. Clark, C. C. Rye crops of the United States, 1866–1906 (Bureau of Stat. Bul. 60). (Bc)
471. Clark, C. C. Buckwheat crops of the United States, 1866–1906 (Bureau of Stat. Bul. 61). (Bc)
472. Clark, C. C. Potato crops of the United States, 1866–1906 (Bureau of Stat. Bul. 62). (Bc)
473. Clark, C. C. Hay crops of the United States, 1866–1906 (Bureau of Stat. Bul. 63). (Bc)
474. Clothier, G. L. Forest planting and farm management (Farmers' Bul. 228). (Bb)
475. Covert, J. R. Dates of sowing and harvesting (Bureau of Stat. Circ. Letter). (Bc)
476. Dodge, L. G. Cropping systems for New England dairy farms (Farmers' Bul. 337). (Bb)
477. Dodge, L. G. Farm management in northern potato-growing sections (Farmers' Bul. 365). (Bb)
478. Hill, G. G. Marketing farm produce (Farmers' Bul. 62). (Bb)
479. Hitchcock, F. H. Trade of Denmark (Sec. of For. Mkts. Bul. 9). (Be)
480. Hitchcock, F. H. Our trade with Spain, 1888–1897 (Sec. of For. Mkts. Bul. 12). (Be)
481. Hitchcock, F. H. Our trade with Japan, China, and Hongkong, 1889–1899 (Sec. of For. Mkts. Bul. 18). (Be)
482. Hitchcock, F. H. Our trade with Scandinavia, 1890–1900 (Sec. of For. Mkts. Bul. 22). (Be)
483. Hitchcock, F. H. Sources of agricultural imports of the United States (Sec. of For. Mkts. Bul. 24). (Be)
484. Hitchcock, F. H. Agricultural exports of the United States, 1896–1900 (Sec. of For. Mkts. Bul. 25). (Be)

485. **Hitchcock, F. H.** Agricultural imports of the United Kingdom, 1896–1900 (Sec. of For. Mkts. Bul. 26). (Be)
486. **Hitchcock, F. H.** Sources of the agricultural imports of the United States, 1897–1901 (Sec. of For. Mkts. Bul. 28). (Be)
487. **Hitchcock, F. H.** Agricultural exports of the United States, 1851–1902 (Div. of For. Mkts. Bul. 34). (Bd)
488. **Holmes, G. K.** Local conditions as affecting farm values, 1900–1905 (Bur. of Stat. Bul. 44). (Bc)
489. **Hunt, T. F.** How to choose a farm. (N) $1.58.
490. **McClure, H. B.** Conditions affecting the value of market hay (Farmers' Bul. 362). (Bb)
491. **Peters, E. T.** Cooperative credit associations in certain European countries (Div. of Stat. Report 3). (Bd)
492. **Roberts, I. P.** The farmer's business handbook. (N) $1.25.
493. **Roberts, I. P.** The farmstead. (N) $1.50.
494. **Smith, C. B.** Clover farming on the sandy jack-pine lands of the North (Farmers' Bul. 323). (Bb)
495. **Smith, C. B.,** *et al.* Replanning a farm for profit (Farmers' Bul. 370). (Bb)
496. **Spillman, W. J.** An example of modern farming (Farmers' Bul. 242). (Bb)
497. **Spillman, W. J.** A successful hog and seed-corn farm (Farmers' Bul. 272). (Bb)
498. **Spillman, W. J.** A successful poultry and dairy farm (Farmers' Bul. 355). (Bb)
499. **Taylor, H. C.** Agricultural economics. (N) $1.25.
500. **Terry, T. B.** Our farming, or, How we have made a run-down farm bring both profit and pleasure. (KKK) 75 cents.
501. **United States.** The world's markets for American products, Great Britain and Ireland (Sec. For. Mkts. Bul. 1). (Be)
502. **United States.** The world's markets for American products, Great Britain and Ireland (Sec. For. Mkts. Bul. 1, Supp.). (Be)
503. **United States.** The world's markets for American products, German Empire (Sec. For. Mkts. Bul. 2). (Be)
504. **United States.** The world's markets for American products, France (Sec. For. Mkts. Bul. 3). (Be)
505. **United States.** The world's markets for American products, Netherlands (Sec. of For. Mkts. Bul. 5). (Be)
506. **United States.** The world's markets for American products, Belgium (Sec. For. Mkts. Bul. 6). (Be)
507. **United States.** The world's markets for American products, Norway (Sec. of For. Mkts. Bul. 7). (Be)
508. **United States.** The world's markets for American products, Sweden (Sec. For. Mkts. Bul. 8). (Be)
509. **United States.** The Manchester district of England as a market for American products (Sec. For. Mkts. Circ. 8). (Be)
510. **United States.** Hamburg as a market for American products (Sec. For. Mkts. Circ. 14). (Be)
511. **United States.** Our trade with Cuba from 1887–1897 (Sec. For. Mkts. Circ. 16). (Be)
512. **United States.** Production and distribution of the principal agricultural products of the world (Div. of Stat. Rep. 5). (Bd)
513. **United States.** Meat animals and packing-house products imported into 11 principal countries, 1895–1904 (Bur. of Stat. Bul. 40). (Bc)
514. **United States.** Norway, Sweden, and Russia as markets for packing-house products (Bur. of Stat. Bul. 41). (Bc)
515. **United States.** Imports of farm and forest products, 1905–1907, by countries from which consigned (Bur. of Stat. Bul. 70). (Bc)

516. United States. Exports of farm and forest products, 1905–1907, by countries to which consigned (Bur. of Stat. Bul. 71). (Bc)
517. United States. Imports of farm products into the United States, 1851–1908 (Bur. of Stat. Bull. 74). (Bc)
518. United States. Exports of farm products from the United States, 1851–1908 (Bur. of Stat. Bul. 75). (Bc)
519. United States. Imports of farm and forest products, 1907–1909, by countries from which consigned (Bur. of Stat. Bul. 82). (Bc)
520. United States. Imports of farm and forest products, 1908–1910, by countries from which consigned (Bur. of Stat. Bul. 90). (Bc)
521. United States. Exports of farm and forest products, 1908–1910, by countries to which consigned (Bur. of Stat. Bul. 91). (Bc)
522. Ward, E. G., jr. Milk transportation: Freight rates to largest 15 cities in United States (Div. of Stat. Bul. 25). (Bd)
523. Ward, E. G., jr. Methods and routes for exporting farm products (Bur. of Stat. Bul. 29). (Bc)
524. Warren, G. F. Laboratory exercises in farm management. (N) 80 cents.
525. Warren, J. A. Small farms in the corn belt (Farmers' Bul. 325). (Bb)
526. Wing, J. E. Alfalfa farming in America. (GG) $2.
527. Woll, F. W. Handbook for farmers and dairymen. (JJ) $1.50.

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528. Green, J. B. Law for the American farmer. (N) $1.50.

13. Fruits.

540. Bailey, L. H. The evolution of our native fruits. (N) $2.
541. Kennedy, P. B. Apples, culture in Nevada (Nevada Bul. 72). (LLL)
542. Waugh, F. A. Systematic pomology. (O) $1.

14. Insects.

550. Chittenden, F. H. Insects injurious to vegetables. (O) $1.50.
551. Comstock, J. H., *et al.* Manual for the study of insects. (MMM) $3.75 net.
552. Connecticut. The apple-leaf miner (Storrs Bul. 45). (H)
553. Fernald, H. T. The imported elm-leaf beetle (Hatch Bul. 76). (D)
554. Franklin, H. J. Cranberry insects (Mass. Agr. Exp. Sta. Bul. 115). (D)
555. Mass. State Forester. Colored plates of the gypsy and brown-tail moths and Calosoma beetle (Mass. State Forester Bul. 14). (F)
556. Mass. State Forester. The gypsy and brown-tail moths (Mass. State Forester Bul. 11). (F)
557. Quaintance, A. L., *et al.* Insect and fungous enemies of the grape east of the Rocky Mountains (Farmers' Bul. 284). (Bb)
558. Sanderson, E. D. Insect pests of farm, garden, and orchard. (JJ) $3.
559. Saunders, Wm. Insects injurious to fruits. (S) $2 net.
560. Smith, John. Our insect friends and enemies. (S) $1.50 net.
561. Smith, J. B. Insects injurious in cranberry culture (Farmers' Bul. 178). (Bb)
562. Weed, C. M. Life histories of American insects. (N) $1.50.

15. Lime and liming.

570. Brooks, W. P. Lime, use of, in Massachusetts agriculture (Mass. Agr. Exp. Sta. Circ. 20). (D)
571. Brooks, W. P. Lime, the rational use of (Mass. Agr. Exp. Sta. Bul. 137). (D)
572. Haskins, H. D., *et al.* Lime, the distribution, composition, and cost of (Mass. Agr. Exp. Sta. Bul. 137). (D)
573. Rhode Island. Influence of lime upon plant growth (R. I. Exp. Sta. Bul. 96). (M)
574. Wheeler, H. J. The liming of soils (Farmers' Bul. 77). (Bb)

16. Physics of agriculture.

Drainage, irrigation, machines, motors, etc.

580. Davidson, J. B., *et al.* Farm machinery and farm motors. (O) $2 net.
581. Elliott, C. G. Practical farm drainage. (JJ) $1.50.
582. Elliott, C. G. Drainage of farm lands (Farmers' Bul. 187). (Bb)
583. Johnston, C. T., *et al.* How to build small irrigation ditches (Farmers' Bul. 158). (Bb)
584. King, D. Ward. The use of the slit-log drag on earth roads (Farmers' Bul. 321). (Bb)
585. King, F. H. Irrigation and drainage. (N) $1.50.
586. King, F. H. Physics of agriculture. (NNN) $1.75.
587. Lucke, C. E., *et al.* The use of alcohol and gasoline in farm engines (Farmers' Bul. 277). (Bb)
588. Powell, F. E. Wind-mills and wind motors. (NNNN) 50 cents.
589. Wickson, E. J. Irrigation in field and garden (Farmers' Bul. 138). (Bb)

17. Plant diseases.

(See also Spraying.)

600. Galloway, B. T. Some destructive potato diseases (Farmers' Bul. 15). (Bb)
601. Mass. State Forester. The chestnut bark disease. (F)
602. Massee, Geo. A textbook of fungi. (N) $2.
603. Shear, C. L. Fungous diseases of the cranberry (Farmers' Bul. 221). (Bb)
604. Smith, Eliza H. Blossom end rot of tomatoes (Mass. Agr. Exp. Sta. Tech. Bul. 3). (D)
605. Stevens, F. L., *et al.* Diseases of economic plants. (N)
606. Stone, G. E. Tomato diseases (Mass. Agr. Exp. Sta. Bul. 138). (D)

18. Plant foods and feeding.

(See also Soils, etc.)

615. Aikman, C. M. Manures and manuring. (OOO) $2.50.
616. Beal, W. H. Barnyard manure (Farmers' Bul. 192). (Bb)
617. Brooks, W. P. Fertilizers for potatoes (Mass. Agr. Exp. Sta. Circ. 26). (D)
618. Brooks, W. P. Poultry manures, their treatment and use (Mass. Agr. Exp. Sta. Circ. 22). (D)
619. Cameron, F. K. The soil solution. (PPP) $1.25 net.
620. Close, C. P., *et al.* Asparagus, fertilizer tests (Md. Bul. 151). (ZZ)
621. Haskins, *et al.* Inspection of commercial fertilizers (Mass. Agr. Exp. Sta. Bul. 140). (D)
622. Johnson, S. W. How crops feed. (O) $1.50.
623. Myers, W. S. Food for plants. (QQQ)
624. Rhode Island. Continuous corn culture (R. I. Exp. Sta. Bul. 113). (M)
625. Rhode Island. Further experiments in top-dressing grassland (R. I. Exp. Sta. Bul. 90). (M)
626: Rhode Island. Cooperative experiments in top-dressing grassland (R. I. Agr. Exp. Sta. Bul. 95). (M)
627. Rhode Island. A test of nine phosphates with different plants (R. I. Agr. Exp. Sta. Bul. 114). (M)
628. Rhode Island. The gain in nitrogen during a five-year pot experiment with different legumes (R. I. Agr. Exp. Sta. Bul. 147). (M)
629. Rhode Island. Plant peculiarities as shown by the influence of sodium salts (R. I. Agr. Exp. Sta. Bul. 104). (M)
630. Rhode Island. Concerning the agricultural value of sodium salts (R. I. Agr. Exp. Sta. Bul. 106). (M)

631. Stewart, J. H., *et al.* Field experiments with fertilizers (W. Va. Bul. 131). (GGG)
632. Voorhees, E. B. Commercial fertilizers: Composition and use (Farmer's Bul. 44). (Bb)
633. Voorhees, E. B. Fertilizers. (N) $1.25.

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634. Halligan, J. E. Soil fertility and fertilizers. (PPP)

19. Plant life, propagation, and tests.

645. Bailey, L. H. Plant breeding. (N) $1.25.
646. Ballou, F. H., *et al.* Potatoes, culture in Ohio (Ohio Bul. 218). (RRR)
647. Beal, W. J. Seed dispersal. (CC) 35 cents.
648. Corbett, L. C. The propagation of plants (Farmers' Bul. 157). (Bb)
649. Coulter, J. M. Plant studies. (YY) $1.25.
650. Craig, A. G. Potatoes, test of varieties (Washington Bul. 94). (SSS)
651. Gray, Asa. How plants grow. (BBB) 64 cents net.
652. Grubb, E. H. Potato culture on irrigated farms of the West (Farmers' Bul. 386). (Bb)
653. Hinson, W. M., *et al.* Tobacco seed beds, management (Conn. Bul. 166). (G)
654. Johnson, S. W. How crops grow. (O) $1.50.
655. Jones, L. R. Vermont grasses and clovers (Vt. Bul. 94). (JJJ)
656. Jordan, W. H., *et al.* Potatoes, fertilizer tests (N. Y. State Bul. 327). (L)
657. Kennedy, P. B. Alfalfa, test of varieties (Nevada Bul. 72). (LLL)
658. MacDougall, D. T. The nature and work of plants. (N) 80 cents.
659. Maine. Experiments in breeding sweet corn (Maine Bul. 183). (I)
660. Maine. Proper growing and handling of potato "seed" stock (Maine Bul. 435). (I)
661. Masters, M. T. Plant life on the farm. (O) $1.
662. Osterhout, W. J. V. Experiments with plants. (N) $1.25.
663. Rhode Island. Further results in a rotation of potatoes, rye, and clover (R. I. Agr. Exp. Sta. Bul. 135). (M)
664. Rhode Island. Grass experiments (R. I. Agr. Exp. Sta. Bul. 82). (M)
665. Rhode Island. Potatoes (R. I. Agr. Exp. Sta. Bul. 111). (M)
666. Rhode Island. The soy bean (R. I. Agr. Exp. Sta. Bul. 92). (M)
667. Spillman, W. J. Farm grasses of the United States. (O) $1.
668. Sutton & Sons. Culture of vegetables and flowers from seeds and roots. (TTT) $1.25 net.
669. Waugh, F. A. The graft union (Hatch. Bul. (Tech.) No. 2). (D)
670. Willis, C. Alfalfa, test of varieties (S. Dak. Report for 1910). (UUU)

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671. Peabody and Hunt. Elementary biology—Plants. (N)
672. Sargent, F. L. Plants and their uses. (HH)

20. Soils, geology, physical geography, soil fertility.

680. Brooks, W. P. The chemical analysis of soils (Mass. Agr. Exp. Sta. Circ. 29). (D)
681. Burkett, C. W. Soils. (O) $1.25.
682. Davis, W. M. Elementary physical geography. (CC) $1 net.
683. Fletcher. Soils. (P) $2 net.
684. Free, E. E., *at al.* The control of blowing soils (Farmers' Bul. 421). (Bb)
685. Gilbert, G. K. An introduction to physical geography. (YY) $1.25 net.
686. Hills, J. L., *et al.* Soil classifications and adaptations (Vt. Bul. 154). (JJJ)
687. King, F. H. The soil. (N) $1.50.
688. McCall, A. G. The physical properties of soils. (O) 50 cents net.
689. Merrill, G. P. Rocks, rock weathering, and soils. (N) $4.
690. Rhode Island. Field experiments on individual farms (R. I. Agr. Exp. Sta. Bul. 148). (M)

691. Roberts, I. P. The fertility of the land. (N) $1.50.
692. Snyder, H. Soils and fertilizers. (N) $1.25.
693. Spillman, W. J. Renovation of worn-out soils (Farmers' Bul. 245). (Bb)
694. Spillman, W. J. Soil conservation (Farmers' Bul. 406). (Bb)
695. Taft, Wm. Conservation of the soil (Circ. 38). (B)
696. Tarr, R. S. Elementary geology. (N) $1.40.
697. Vivian, A. First principles of soil fertility. (O) $1 net.
698. Whitney, M. Soil fertility (Farmers' Bul. 257). (Bb)

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699. Lyon, T. L., *et al.* Soils. (N)

21. Spraying and fumigation.

710. Clinton, G. P., *et al.* Spraying experiments (Conn. State Report, 1909–10). (G)
711. Connecticut. Proprietary and home-made miscible oils for the control of the San José scale (Storrs Bul. 54). (H)
712. Connecticut. Petroleum emulsion for the San José scale (Storrs Bul. 49). (H)
713. Galloway, B. T. Potato diseases and their treatment (Farmers' Bul. 91). (Bb)
714. Goodwin, W. H. Spraying machinery (Ohio Bul. 216). (RRR)
715. Hinds, W. E. Carbon bisulphid as an insecticide (Farmers' Bul. 145). (Bb)
716. Howard, L. O. The brown-tail moth and how to control it (Farmers' Bul. 264). (Bb)
717. Howard, L. O. The gypsy moth and how to control it (Farmers' Bul. 275). (Bb)
718. Johnson, Willis G. Fumigation methods. (O) $1.
719. Lodeman, E. G. The spraying of plants. (N) $1.25.
720. Lutman, B. F. Spraying experiments on potatoes (Vt. Bul. 153). (JJJ)
721. Marlatt, C. L., *et al.* The control of the codling moth and apple scab (Farmers' Bul. 247). (Bb)
722. Marlatt, C. L. Important insecticides: Directions for their preparation and use (Farmers' Bul. 127). (Bb)
723. Orton, W. A. Spraying for cucumber and melon diseases (Farmers' Bul. 231). (Bb)
724. Rhode Island. When to spray. Formulas and notes on spraying (R. I. Agr. Exp. Sta. Bul. 100). (M)
725. Scott, W. M., *et al.* Spraying peaches for the control of brown-rot, scab, and curculio (Farmers' Bul. 440). (Bb)
726. Slingerland, M. V., *et al.* Insects, injurious, treatment (Cornell Bul. 283). (K)
727. Stone, G. E., *et al.* Fungicides, insecticides, and spraying directions (Mass. Agr. Exp. Sta. Bul. 123). (D)
728. Swingle, W. T. The prevention of stinking smut of wheat and loose smut of oats (Farmers' Bul. 250). (Bb)
729. Van Slyke, L. L., *et al.* Lime-sulphur wash, preparation (N. Y. State Bul. 329). (L)
730. Waite, M. B. Fungicides and their use in preventing diseases of fruit (Farmers' Bul. 243). (Bb)
731. Wallace, E. Lime-sulphur preparations, injurious effects (Cornell Bul. 288). (K)
732. Weed, C. M. Insects and insecticides. (O) $1.50.
733. Whetzel, H. H. Diseases of plants, treatment (Cornell Bul. 283). (K)

22. Textbooks and manuals for schools.

(Agricultural.)

745. Barto, D. A. Manual of agriculture, soils and crops. (CCC) 50 cents net.
746. Bricker, G. A., *et al.* Agricultural words. (VVV) 5 cents.
747. Burkett, Stevens, and Hill. Agriculture for beginners. (CC) 60 cents net.
748. Corbett, L. C. The school garden (Farmers' Bul. 218). (Bb)

749. Coulter, J. M., *et al.* Practical nature study and elementary agriculture. (YY) $1.35.
750. Crosby, D. J. School exercises in plant production (Farmers' Bul. 408). (Bb)
751. Crosby, D. J., *et al.* School lessons on corn (Farmers' Bul. 409). (Bb)
752. Davis, C. W. Rural school agriculture. (O) $1.
753. Davis, K. C. Productive farming. (S) $1.
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755. Farrar, H. A. A year of agriculture in a rural Vermont high school (Middlebury Coll. Bul. 5). (WWW)
756. Field, Jessie. Farm arithmetic. (XXX) 15 cents.
757. Fisher and Cotton. Agriculture for common schools. (EEE) $1.
758. Fream, W. Elementary agriculture. (U) $1.25 net.
759. Goff, E. S., *et al.* First principles of agriculture. (BBB) 64 cents net.
760. Halligan, J. E. Fundamentals of agriculture. (CCC) $1.25 net.
761. Hatch and Haselwood. Elementary agriculture. (YYY) 50 cents.
762. Hays, W. M. Farm development. (O) $1.50 net.
763. Hillma, F. H. Testing farm seeds in the home and in the rural school (Farmers' Bul. 428). (Bb)
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765. Howe, F. W. How to test seed corn in school (Of. of Exp. Sta. Circ. 96). (Ba)
766. Hurd, W. D. Course in agriculture for high schools and academies in Maine. (AAAA)
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769. Mass. State Forester. The evergreens: Methods of study in public schools (Mass. State Forester Bul. 4). (F)
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771. Moore, W. M., *et al.* Forest nurseries for schools (Farmers' Bul. 423). (Bb)
772. Nolan, A. W. One hundred lessons in agriculture. (YYY) 65 cents.
773. Shaw, E. E. Gardening. (P)[1]
774. Shoesmith, V. M. The study of corn. (O) 50 cents net.
775. Soule and Turpin. Agriculture: Its fundamental principles. (ZZZ) 75 cents.
776. Stevens, F. L., *et al.* A practical arithmetic. (EEE) 65 cents.
777. Upham, A. A. An introduction to agriculture. (YY) 75 cents net.
778. Warren, G. F. A secondary course in agronomy (Of. of Exp. Sta. Circ. 77). (Ba)
779. Weed, C. M. Farm friends and farm foes. (CCC) 90 cents net.
780. Weed, C. M., *et al.* The school garden book. (EEE) $1.25.
781. Wilkinson, J. W. Practical agriculture. (BBB) 80 cents net.
782. Wilson, A. D., *et al.* Agriculture for young folks. (Q) $1.
783. Winkenwerder, H. A. Forestry in the public schools (U. S. Forest Service Circ. 130). (Bg)

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784. Comstock, A. B. Handbook of nature study. (MMM) $3.65 net.
785. Burkett, C. W., *et al.* Farm arithmetic. (O)
786. Budd, J. L., *et al.* American horticultural manual. (JJ)
787. Call, L. E., *et al.* A laboratory manual of agriculture. (N)
788. Stebbins, C. A. The principles of agriculture through the school and home garden. (N)
789. Calfee, J. E. Rural arithmetic. (CC)
789.1 Ross. A dairy laboratory guide.

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[1] A volume in the "Library of Work and Play," for sale only as a complete set of 10 volumes at $17.50.

23. *Trees and shrubs.*

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790. Bates, C. C. Windbreaks (U. S. Forest Service Bul. 86). (Bg)
791. Blakeslee, A. F., *et al.* Trees in winter. (N)
792. Blakeslee, A. F., *et al.* New England trees in winter (Storrs Bul. 69). (H)
793. Gifford, John. Practical forestry. (YY) $1.20.
794. Jones, L. R., *et al.* Vermont shrubs and woody vines (Vt. Bul. 145). (JJJ)
795. Maine. Wood-lot suggestions (Maine Bul. 402). (I)
796. Mass. State Forester. Forest trees of Massachusetts, how you may know them (Mass. State Forester Bul. 1). (F)
797. Mass. State Forester. Massachusetts wood-using industries (Mass. State Forester Bul. 3). (F)
798. Mass. State Forester. Reforestation in Massachusetts (Mass. State Forester Bul. 5). (F)
799. Mass. State Forester. How and when to collect white-pine seed (Mass. State Forester Bul. 6). (F)
800. Mass. State Forester. Forest mensuration of the white pine, how to estimate standing timber (Mass. State Forester Bul. 7). (F)
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802. Mass. State Forester. How to make improvement thinnings (Mass. State Forester Bul. 8). (F)
803. Pinchot, G. Forest planting (U. S. Forest Service Circ. 61). (Bg)
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805. Pinchot, G. A primer of forestry: Part II, practical forestry (Farmers' Bul. 358). (Bb)
806. Spring, S. N. White pine: Natural replacement on old fields in New England (U. S. Bureau of Forestry Bul. 63). (Bh)

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821. Pammel, L. H. Weeds of the farm and garden. (O) $1.50 net.
822. Rhode Island. Weeds, their eradication and control (R. I. Exp. Sta. Bul. 133). (M)

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(See also above references 360, 361.)

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831. Osborne, H. Economic zoology. (N) $2.

VI. For betterment of country life and education.

835. Abbey, M. J. Normal-school instruction in agriculture (U. S. Of. of Exp. Sta. Circ. 90). (Ba)
836. Anderson, W. L. The country town. (BBBB) $1.
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868. Page, L. W., *et al.* How to prevent typhoid fever (Farmers' Bul. 478). (Bb)
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874. Stiles, C. W., *et al.* The sanitary privy (Farmers' Bul. 463). (Bb)
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876. Williams, Dora. Gardens and their meaning. (CC) 80 cents net.
877. Wilson, E. T. Modern conveniences for the farm homes (Farmers' Bul. 270). (Bb)

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[1] A volume in the "Library of Work and Play," for sale only as a complete set of 10 volumes at $17.50.

878. Hunt, Thos. F. The young farmer. (O)
879. Saint Maur, Kate. A self-supporting home. (N)
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- Bj
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[1] Apply to the director.

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APPENDIX.

TYPES OF MASSACHUSETTS AGRICULTURAL SCHOOL.[1]

By WILLIAM T. BAWDEN,

Managing Editor of "Vocational Education."

At a meeting of representatives of State departments of education held at Staten Island, N. Y., the Massachusetts plan of agricultural instruction was described by its originator and director, Rufus W. Stimson, agent for agricultural education of the State board, Boston. So much interest was manifested by the men from the other States that Mr. Stimson invited a group of those present to accompany him on one of his trips of inspection in order to visit a number of schools in operation and to study the experiments at first hand. The party consisted, in addition to Mr. Stimson, of three representatives of State departments of education having charge of the work in agriculture—Layton S. Hawkins, Albany, N. Y.; Lindley H. Dennis, Harrisburg, Pa.; Lewis H. Carris, Trenton, N. J.—and the writer of this report.

The party met at Northampton, Mass., on Monday morning, June 9, 1913, visited schools in the immediate vicinity, and proceeded thence to Hadley, Amherst, Petersham, and Northboro. The trip was made in Mr. Stimson's touring car, which not only added greatly to the enjoyment of the party, but also made it possible to cover more territory than could have been attempted otherwise and permitted visits to a number of the boys on their home farms. On Wednesday evening the automobile trip of over 200 miles came to an end at the Back Bay Station in Boston in time to catch the 5 o'clock train for New York.

The first school visited was Hopkins Academy, at Hadley, a village of about 2,000 inhabitants. Under the principalship of Franklin E. Heald, this school three years ago introduced a four-year vocational agricultural course. By thus attempting to adjust itself more closely to the needs of a small community in which farming interests were at least equal in importance to those of higher education, a most interesting transformation has been wrought in a typical traditional New England classical academy. The records show that under the old conditions the proportion of entering students who were graduated reached the low-water mark of 40 per cent, whereas last year it was 88 per cent.

The work in the agricultural course is of secondary grade, and it is regarded as desirable, though not absolutely essential, that pupils shall have completed the work of the elementary school. There are 20 boys in the school, of whom 12 are taking the course in agriculture. The instructor is E. J. Burke, a graduate of the Massachusetts Agricultural College. The students of the first two years meet the instructor in the morning, and those of the last two years in the afternoon. Practically all of the boys spend their free half days in taking the regular academic subjects planned for the course, which is as follows, the numerals indicating number of periods weekly:

First year: Agriculture, 20; English, 5; general science, 3; social science, 3.
Second year: Agriculture, 20; English, 4; biology, 5.
Third year: Agriculture, 20; English, 4; chemistry, 5.
Fourth year: Agriculture, 20; English, 4; physics, 5.

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[1] This appendix reproduces portions of a report which was jointly agreed upon by the four visitors named in the first paragraph, which was written by Mr. Bawden, and which was published in the November, 1913, issue of *Vocational Education.*

The school is not large enough to make practicable special classes in science and English for the agricultural students; so the simple plan has been adopted of enrolling them in the regular classes. Whenever the home project work requires the entire time of a pupil, he is excused from all classes temporarily. One small classroom, with no special equipment, has been set aside for the work in agriculture. The school grounds include space for demonstration plats, and a small orchard which has been used as a laboratory for the study of spraying, grafting, etc. The land and orchard are not essential parts of the scheme, however; so that it could be duplicated in any village or rural high school situated within reach of boys living on the farm.

The second type of school visited is the Smith's Agricultural School at Northampton. The feature of this school that interested the visitors most is its unique architecture. The illustrations suggest how admirably the building is adapted to its purpose (see p. 32.)

By placing four building units so as to inclose a rectangle of suitable dimensions (Plate A), and roofing over the inclosed space, an "arena" is provided which serves a number of distinctive purposes (see Plate B). The auditorium, with its raised seats, is so situated as to command a view of the inclosure when sliding partitions are lifted. On Wednesday, May 28, 1913, a horse show was staged which lasted through the afternoon and evening. Prize ribbons were awarded for exhibits in 17 different classes. The boys put up a tent and built temporary stalls in the rear of the building to shelter the animals, and the arena afforded an ideal place for the exhibits (see frontispiece). The display included single and double teams of draft and of driving horses, boys and girls riding in the saddle, Shetland ponies driven by children, and fast horses.

An expert from the Massachusetts Agricultural College was present to assist in judging the exhibits, and, as part of the evening program, an official announcer drew attention to the fine points of the various winning horses. At appropriate times the prize horses were led before the audience, and the practical demonstration of horse judging was made complete. There was no lack of fine horses, as exhibits were entered from near-by stock farms and even from as far away as Springfield.

Concerning the school itself the following statements from the announcement are explanatory:

> The institution has three affiliated schools: School of agriculture, girls' school of industries, and boys' school of industries. The different trades and occupations taught in the school are known as departments. The boys' school of industries already has a department of cabinetmaking and a department of machinists, and is considering the advisability of establishing a department of house carpentry. The girls' school of industries already has a department of homemaking, and is considering the advisability of establishing a department of sewing and dressmaking.
>
> The industrial work of each department is in the hands of trained and competent workmen. In all cases these workmen are taken from active life rather than from the teaching profession. In addition to the expert workmen found in the industrial work, experienced teachers have charge of the students in their nonindustrial work in English, history, citizenship, science, etc.
>
> The work of the students falls under three heads, with the following time allotment: Productive work, 50 per cent; subjects closely related to the productive work, 30 per cent; subjects that prepare for citizenship and leisure, 20 per cent. While not slavishly followed, this is regarded as the best distribution of a student's time that we can make in the present status of vocational education.
>
> The school is available for any boy or girl between the ages of 14 and 25. No educational qualifications are demanded. Boys and girls who have not completed the seventh grade find the work exacting. They are not, however, excluded from the school until they demonstrate their inability to do the work. No student is allowed to remain in the school who does not come for the purpose of learning a trade or mastering an occupation or who does not show sufficient ability to master the requirements of the industrial part of his work.
>
> In a word, the institution is for any boy or girl at least 14 years old who does not, for one reason or another, intend to continue in the regular public school, and who wants to fit himself or herself for earning a living in an occupation or trade. * * * The school does not aim to fit its pupils to meet the examinations of other educational institutions.

The director of the school is Dr. Herbert N. Loomis; Thomas Bradlee is in charge of the agricultural work; Walter S. Graffam is head of the boys' school of industries; and the work for girls is under the direction of Miss Mildred J. Taylor and Miss Catherine A. Murray.

The third type of school visited is the consolidated rural school, with high-school department, at Petersham. This school is out in the open country, 10 miles from the nearest railroad, and occupies a beautiful site of about 10 acres on a hilltop. The equipment of the school includes a greenhouse 20 by 30 feet. The principal is F. D. Reed, and the director of the agricultural work is L. B. Boston.

When the visitors entered the room the class in agriculture was at work upon a very practical problem in balanced grain rations. which grew out of a letter which the instructor had received the day before. The letter was from a neighboring farmer and read as follows:

> I am uncertain as to what is the best grain ration to feed my three cows, and any information along this line would be appreciated. They are in a rather poor pasture and I am at present feeding grain as follows:
>
> "Spot," a grade Holstein calved March 4; April milk yield, 1,075 pounds; May, 1,175 pounds; at present giving from 33 to 36 pounds per day; gets 2 pounds cottonseed meal, 4½ pounds corn meal, and 4½ pounds wheat bran per day.
>
> "Daisy," a brown Jersey due to calve July 8; giving about 12 pounds milk per day; gets 2 pounds bran and 2 pounds corn meal per day. This cow will be dried off within a couple of weeks, but I would like to know how to best handle her when fresh next month.
>
> The third cow is of no particular breed that I know of; was fresh last September and due to calve next September; giving 15 to 18 pounds of milk per day now; she gets 2 pounds corn meal, 2 pounds bran, and 1½ pounds cottonseed per day.
>
> I am selling whole milk to one of my neighbors at 40 cents per 8½ quart can and want as cheap a grain ration as possible to produce a large flow of milk.

Working from the given data the class prepared a statement of the proper methods of feeding, together with an estimate of the probable financial return. It would be difficult to find a more suggestive example of the ways in which the present-day school is recognizing and meeting its opportunities for social service, utilizing them at the same time for the maximum of educational values.

In this school, as in the others described, the agricultural instructor devotes his entire time to two sections of students, a beginning section in the mornings and an advanced section in the afternoons. A boy may take this work only, spending the rest of the time on the farm, or on his free half days he may elect one or more of the regular high-school subjects.

The fourth school is that at Northboro, under the direction of John H. Fay. It is in successful operation without any land for laboratory purposes. Class study is carried on in a vacant store rented for the purpose, and all projects are carried out on the home farms.

INDIVIDUAL PROJECTS DESCRIBED.

The following is the very interesting record of Chester Spinney, Petersham school, for the summer of 1912: Vegetable garden, five-eighths acre, net profit, $44.35; credited self for labor, $12; boy's return, $56.35; this vegetable garden constituted the "project" which he carried on under school supervision. In addition, he set out and cultivated 1,000 strawberry plants; raised 1 acre of corn and one-fourth acre of potatoes; plowed and planted 1 acre of millet and one-fourth acre of buckwheat; cared for 3 cows, 1 horse, and 50 hens. Chester's father was incapacitated by an accident, so that the boy did all the work that was done on the home place that summer. A careful account was kept of work performed and produce sold, which showed that he was entitled to a credit of $164.60 for this nonproject work. Thus the grand total of return for the project period, which included the growing and the harvesting seasons, was $227.03.

During the present season, 1913, Gordon Nightingale, also at the Petersham school, is undertaking as his "project" the care of 4 dairy cows, raising 3 calves, 2 pigs, and 175 chickens. He is keeping careful records of the feed consumed, the amount and quality of milk produced, and eggs and chickens marketed. Besides this school-supervised work he has assumed the responsibility of one-half acre of vegetable garden and 1 acre of corn; he set out in the spring an orchard of 3½ acres, 345 trees of three varieties of apples, and between the rows of young trees is raising crops of corn, turnips, and mangels. Figure 4 shows one of Gordon's daily reports.

In 1912 Albin Anderson, a pupil at the Northboro school, undertook as his project one-sixth acre of potatoes, his father at the same time putting in a crop of 3½ acres. Both sprayed with arsenate of lead to protect the growing plants from the potato beetle, In addition, as a result of what was learned in school, the boy sprayed with Bordeaux mixture in July in the effort to control blight. The father, however, could not be persuaded that the extra labor was worth while, the usual decrease in the potato crop in this section due to blight being regarded as inevitable. At harvest time the boy's methods were more than vindicated by a good yield of excellent quality, while the plants in the father's entire field were killed early by blight and the yield was markedly deficient.

In this connection it may be appropriate to refer to another instance of a school's contribution, through its teacher, to the solution of practical farm problems, the details of which came to the attention of the agent of the State board. It happened one day that a valuable horse was severely gored in the flank by a vicious cow. There was no one about the neighborhood who could care for the wound, and in fact its seriousness was not fully realized at the time. It seemed to be necessary that the horse be kept at work, and this, with the warm weather, soon produced a condition of fever, swelling, and suppuration, and the farmer realized that he was threatened with the loss or disablement of a valuable animal. About this time the agricultural instructor came to visit the boy's project, and noticed at once the critical condition of the horse. He secured some silk thread from the farmer's wife, and suture needles from his kit, prepared an antiseptic solution, and with the assistance of the boy and his father treated the wound. He then instructed the boy in the proper care of the wound, and in a few days it healed perfectly. The farmer informs his neighbors now in no uncertain terms that "that young fellow they've got down there to teach farming *knows his business.*"

In the school at Northboro an experiment in fattening chickens for the market was undertaken as a class project in October, 1912. Each of the 11 members of the class brought in 4 chickens. These were all spring cockerels, culls from flocks that were not considered suitable for carrying through the winter. The fattening of these for the market, therefore, was one of the normal problems of the poultry raiser.

Crates were built in which the chickens were confined during the time of the experiment. They were fed twice daily, at 7 a. m. and 7 p. m., all they would eat of a batter made of corn meal and wheat middlings mixed with skim milk. Thirty minutes daily for the 18 days were required for the work of feeding, 2 hours for weighing, and 6 hours for killing and dressing; total labor, 17 hours. The following is a table of the cost items, labor not being considered:

Grain, 175 pounds, at $0.0175	$3.07
Skim milk, 11 cans, at $0.15	1.65
Leg bands, for identification of birds	.35
Use of crates, 10 per cent of cost	.40
Cost to feed 44 chickens	5.47
Cost to feed 1 chicken	.13

Each pupil kept a careful record throughout the progress of the work and performed the necessary computations to determine the profits realized. Such an experiment, besides training in methods of procedure, should throw light on the conditions under which it pays to fatten for the market, and when it is better business to sell without the labor and expense of fattening. The opportunities for related work in mathematics and language are sufficiently obvious.

CONCLUSIONS.

This account must now be brought to a close with a brief summary of the important considerations that come to the mind of the critical observer of the Massachusetts plan.

1. **High per capita costs.**—Creative work of the type observed in these schools means the maintenance of a high level of enthusiasm on the part of the workers, as well as constant intimate contact with the very practical and vital economic problems of farming. In common with creative work in any other line of endeavor, it demands men of more than average energy and initiative. Under existing conditions of supply and demand, it has been impossible to find instructors with the necessary qualifications for this work at anything like the prevailing rates of salaries for teachers. In the schools visited on this trip the salaries of the agricultural instructors range from $1,000, for one in his first year on the job, to $1,800. In more than one instance the agricultural instructor is paid more than the principal of the school. As already noted, each such instructor is expected to devote his entire time to approximately 20 students.

It is necessary to face squarely the objection that education under these conditions is expensive. It would certainly be so regarded in certain parts of the country, for example, where the people are accustomed to paying teachers in the rural schools $500 or less. The decision that a proposed course of action is expensive, however, must rest upon other considerations than a mere statement of cost in dollars and cents; such as, what returns from the expenditure can be shown, what will be the results of adopting the alternatives of doing without or managing in some other way, how badly is it needed?

Here is found the justification for State aid. After it has been established that the proposed form of education is important and necessary, it still fails of being put into effect in many places because the extra burden is too great for the community to assume. But the expected advantages are not to be confined to the community; hence the State is justified in encouraging the needed development by financial assistance. According to the terms of recent legislation in several States, the State pays two-thirds of the salary of the teacher, or one-half of the operating expenses (substantially the same amount of assistance), and thus reduces the burden to a point where the community can properly assume it.

It is to be remembered, further, that these teachers are employed on a 12-months' contract, which allows one month's vacation and requires each teacher to spend two months, during the winter, in "professional improvement" preparing for increased efficiency. This study is done under the supervision of the State agent. The instructor is, of course, on duty all the time during the planting, cultivating, and harvesting seasons.

2. **Agricultural education an investment, not an expense.**—Without doubt, there are localities where the duplication of the Massachusetts experiment would be rank extravagance, or possibly waste of public money. The indiscriminate introduction of such work everywhere would be a most unreasonable proposal. The present tendency, however, gradually coming to consciousness, is to regard money devoted to education as essentially of the nature of investment rather than expense. When this view is applied to agricultural education, in common with other forms of vocational education, its significance is more easily grasped than in the case of general education. And it is not necessary in making this statement to contend that the

general proposition is any more true in the former case than in the latter, because it is easier to see it and to demonstrate it.

3. **Practical nature of the work.**—The feature of the plan that most impresses the visitor is the practical nature of the work undertaken. The instructor is a master of real farm work, and, with his students, deals directly with live farm problems and not with artificial experiments in a school garden or laboratory.

4. **A sane point of view.**—The members of the visiting party were unanimous in expressing their approval of the fundamental principles upon which the Massachusetts plan is based. The entire experiment rests upon a strictly vocational basis. No boy is admitted to one of these classes who does not actually live at home upon a farm, or who is unable to arrange to do productive farm work, since parent or guardian or employer must guarantee to the school that the boy will have unrestricted control of the piece of land, flock of poultry, or other agreed-upon conditions of the proposed project. The amount of time to be allowed for the work is also expressly understood.

The instructor, up to the limit of his ability, takes a fatherly or brotherly interest in many vegetable and flower gardens in the neighborhood; he acts in an advisory capacity to as many of the agricultural undertakings of grammar-school boys and girls as he can reach; but this is all on the side. If the State department of education would recognize such work, and give the necessary authorization for such supervision, it could greatly reduce the per capita cost. But it has deliberately decided to limit itself, so far as formal recognition is concerned, to work of an intensive kind with boys and girls who have definitely chosen to undertake real responsibilities and who are mature enough to profit by the experience.

In thus limiting formal recognition to supervision of boys and girls who have definite plans for farm work, the board does not intend to minimize the importance of school garden work and other similar enterprises among the elementary school children. While such work can not be regarded as strictly vocational, it does have great prevocational or avocational values. In order to conserve all these values, efforts are constantly made to stimulate and direct the activities of the regular teachers and the cooperation of interested groups of citizens. Help is offered in planning and conducting "growing contests" and public exhibitions under school auspices.

So far as the instructors are concerned there is constantly kept in mind the aim of systematically becoming acquainted with the best types of farming in the community and then of exercising a helpful influence in those districts where it is most needed. Every effort is made to promote more permanent tenure of position on the part of the teacher and genuine interest and pride in the locality which he is trying to build up. In this work, as in all school work, the disastrous effects of a constantly changing teaching population constitute almost the worst obstacle that must be contended against.

5. **Supervision of unusual efficiency.**—The master mind and the source of inspiration in this whole movement is the State agent. More than once the visitors were witnesses of his skill in meeting and utilizing situations as they arose. The instructor may be with the agent for several hours as they go about together in the automobile visiting each boy at his project. This time is spent in earnest consultation about the details of the work, in the giving of advice and suggestion, and in conveying some message of encouragement from a successful project under way elsewhere, and, finally, in the necessary criticism and correction of mistakes. The State agent is constantly in touch with the boys and their parents, upholding the hands of his instructors and, with the school trustees and members of advisory committees, inspiring them with appropriate commendation and with accounts of the achievements of other districts.

The value to the teachers of the continual object lesson in sympathetic expert supervision can hardly be overestimated. So far as the members of the visiting party are concerned, it was agreed that this was one of the most helpful suggestions carried away from the entire trip.

6. All problems not yet solved.—The reader should not gain the erroneous impression that a perfect system has been evolved and that but little remains to be done but to transplant it. There are plenty of unsolved problems; that is why the work is so interesting. High per capita cost, the conservatism of rural populations, the difficulty of securing and retaining efficient teachers, the perfecting of machinery and methods—these and other problems will continue to demand thoughtful study. Even the boys and girls present problems of their own in the rural school, as in the city school. Every instructor in vocational subjects will be able to sympathize with the agricultural instructor who finds the progress of his work impeded by the necessity of dealing with the boy who just wants to try it to see what it is like and the boy who discovers other interests as soon as it appears that the new kind of school means real hard work.

7. The experiment successful.—If it would be misleading to leave the impression of achieved perfection, it would, on the other hand, be unjust to withhold commendation of the plan as a whole. It is not necessary for the visitor to take the instructor's or the agent's word for it; he can observe for himself that the new kind of school is training in vocational efficiency, is developing boys and girls of energy and initiative, is fostering a spirit of independence and perseverance, and is accustoming young people to the experience of successfully coping with real difficulties.

The work of these agricultural schools and departments is principally with boys and girls who have discontinued their work in the regular schools or who have indicated a desire for some form of training other than that preparing for higher schooling. In making successful men and women out of boys and girls whose needs have been met only in part by the existing schools, and in providing a training in vocational efficiency, with due regard to social responsibilities, for those who can not utilize the traditional high-school and college education, the agricultural school is meeting genuine social needs.

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CONTENTS.—Introductory notes—Publications of associations—Educational history and biography—Current educational conditions—Pedagogics and didactics—Educational psychology; Child study—Special subjects of curriculum—Kindergarten and primary school—Rural education—Secondary education—Teachers: Training and professional status—Higher education—School administration—School management—School hygiene and sanitation—Sex hygiene—Physical training—School gardens—Social aspects of education—Child welfare—Moral education—Religious education—Manual and vocational training—Vocational guidance—Home economics—Commercial education—Professional education—Education of women—Negro education—Exceptional children—Education extension—Libraries and reading—Bureau of Education: Recent publications—Periodicals indexed in this number—Bulletin of the Bureau of Education.

INTRODUCTORY NOTES.

Attention is invited to the following selected list of prominent books and articles of the current month, the numbers in parentheses referring to the numbers of the full entries in this bulletin:

Eliot, Present problems of education (404); Ohio state school survey commission, Report (410); The education of Karl Witte (427); Whipple, Manual of mental and physical tests, 2d ed., Part I (432); Hill, Experimental studies in kindergarten theory and practice (454); Curtis, Play and recreation for the open country (458); McCoy and Harley, Salaries and teaching conditions in high schools (466); Thwing, The American college (485); Elliott, State school surveys (489); Royal commission on industrial training and technical education, Report (531); McKeever, Training the girl (561); Morgan, The backward child (568).

Of the publications listed, only those named in the sections headed "Bureau of Education: Recent publications," and "Bulletin of the Bureau of Education," are available for free distribution by this Office. All others may ordinarily be obtained from their respective publishers, either directly or through a dealer, or, in the case of an association publication, from the secretary of the issuing organization. A list of periodicals indexed, with places of publication, may be found at the end of this bulletin.

Books, pamphlets, etc., intended for inclusion in this record should be sent to the library of the Bureau of Education, Washington, D. C.

PUBLICATIONS OF ASSOCIATIONS.

392. **Central association of science and mathematics teachers.** Proceedings of the twelfth meeting . . . held at Northwestern university, Evanston Illinois, November 29–30, 1912. 115 p. 8°. (C. E. Spicer, secretary-treasurer, Joliet, Ill.)

Contains: 1. W. C. Bagley: Vocational guidance and the teacher of science, p. 5–13. 2. C. G. Pearse: High school mathematics and science teaching, p. 13–22. 3. A. C. Norris: Experimental work in chemistry that can be done at home by secondary school pupils, p. 46–48. 4. Final report of the committee on methods of testing results of teaching physiography, p. 54–60. 5. W. W. Hart: Review of the teaching of secondary mathematics in the past decade, p. 66–74. 6. R. L. Short: Mathematics and the vocational school, p. 74–78. 7. J. V. Collins: The preparation of teachers of mathematics, p. 79–85. 8. Report of the committee on tests of efficiency in physics teaching, p. 101–104. 9. W. E. Tower: The teaching of physics in segregated classes, p. 104–109.

393. **Florida educational association.** Report of the convention, held at Key West, Florida, December 30, 1913 to January 1, 1914. Florida school exponent, 21: 3–15, February 1914. (R. L. Turner, secretary, Inverness, Fla.)

Contains: 1. W. N. Sheats: [School conditions in Florida].—2. Edward Conradi: The American peace movement.—3. A. P. Montague: The teacher as a force in civilization.—4. Miss Johnnie W. Rutland: Co-operation in other departments in teaching English composition.

394. **Illinois state teachers' association.** Journal of proceedings of the fifty-ninth annual meeting . . . held at Peoria, Ill., December 26–28, 1912. [Springfield, Ill., Illinois state journal co., state printers, 1913.] 154 p. 8°. (George W. Conn, jr., secretary, Woodstock, Ill.)

Contains: 1. C. A. Prosser: [Vocational education], p. 61–68. 2. P. P. Claxton: [Popular education] p. 68–73. 3. F. G. Blair: A suggested community survey, p. 81–82. 4. Julia H. Gulliver: The influence of the college upon the moral and religious life of the student, p. 99–102. 5. Emma B. Grant: History of Montessori method and its purposes, p. 103–7. 6. Elizabeth Jenkins: Impressions of an American observer in the Montessori schools, p. 109–16. 7. S. H. Dadisman: The consolidated school as a force in the upbuilding of country life, p. 127–32.

395. **Maryland state teachers' association.** Forty-sixth annual meeting . . . Annapolis, Md., June 24–27, 1913. (Hugh W. Caldwell, secretary, Chesapeake City, Md.)

Contains: 1. P. L. Goldsborough: [Education] p. 21–26. 2. A. D. Yocum: [Readjustment of education] p. 27–31. 3. T. S. Baker: [Home and school] p. 34–40. 4. M. B. Stephens: [The teaching force] p. 41–46. 5. A. P. Call: Peace, p. 48–63. 6. M. B. Stephens: Electives in the high school course, p. 110–14. 7. O. H. Benson: Education for farm and home by correlation, p. 118–31. 8. S. D. Gray: Vocational work in the public schools, p. 131–35.

396. **National education association. Department of superintendence.** [Synopsis of the meeting held at Richmond, Va., February 22–28, 1914.] Journal of education, 79: 283–91, 294, 296–301, March 12, 1914.

Contains: 1. J. M. Gwinn: The scholastic function of the school to the community it serves.—2. Henry Neumann: What should be the aims of the high schools?—3. C. S. Meek: The public school survey.—4. J. R. Kirk: The twentieth century normal school.—5. C. G. Pearse: The twentieth century normal school: new problems, new branches, new ideals.—6. David Snedden: Fundamental distinctions between liberal and vocational education.—7. E. L. Thorndike: The foundations of school achievement.

397. **Pennsylvania state educational association.** Proceedings of sixty-fourth meeting, session at Pittsburgh, December 30, 1913–January 1, 1914. Pennsylvania school journal, 62: 317–76, February 1914.

Contains: 1. J. S. Hiatt: Industrial training for the worker, not the work, p. 328–33. 2. O. W. Burroughs: Adolescent idler, in school and out, p. 333–37. 3. W. A. Wirt: A new municipal institution for the education of children, p. 337–38. 4. C. A. Prosser: Conservation of the child, p. 338–41. 5. Value of local educational associations—J. W. Sweeney: From view-point of county superintendent, p. 341–43; Margaret M. Sullivan: From view-point of the teacher, p. 343–44; R. E. Laramy: From view-point of district superintendent, p. 344–45. 6. U. L. Gordy, Olive F. Church, and T. S. Davis: Relation of state to local associations, p. 345–50. 7. J. G. Becht: Teachers' pensions, p. 350–56. 8. F. P. Graves: Vocation, culture and efficiency, p. 358–62. 9. Alexander Meiklejohn: What knowledge is for, p. 362–64. 10. The school and the teaching of morality—S. B. McCormick: From the standpoint of the teacher, p. 365–68; Harlan Updegraff: From the standpoint of the administrator, p. 368–71.

398. **Southeast Missouri teachers' association.** Proceedings and addresses of the thirty-eighth annual meeting, Poplar Bluff, Mo., October 23–25, 1913. 103 p. 8°. (Bee Cotton, secretary, Doniphan)

Contains: 1. R. H. Emberson: The spirit of the teacher, p. 23–30. 2. Bertie Coffman: Social interpretation of the country school, p. 31–34. 3. Marie Harvey: The possibilities of the one-room school, p. 35–38. 4. L. O. Swan: The public school of the future, p. 49–58. 5. F. G. Blair: Waste in education, p. 58–75. 6. Ada Wile: Country school literary societies, p. 75–82. 7. A. S. Boucher: Superintendents' work in smaller cities, p. 82–90.

EDUCATIONAL HISTORY AND BIOGRAPHY.

399. **Finegan, Thomas E.** The life and public services of Andrew S. Draper. Albany, University of the state of New York, 1914. 29 p. 8°.

An address delivered before the New York state teachers association at Syracuse, November 26, 1913.

400. **Kemp, William Webb.** The support of schools in colonial New York by the Society for the propagation of the Gospel in foreign parts. New York city, Teachers college, Columbia university, 1913. 279 p. 8°. (Teachers college, Columbia university. Contributions to education, no. 56)

CURRENT EDUCATIONAL CONDITIONS.

401. **Bayne, Margaret W.** The schools of Washington. Life and labor, 4: 82–85, March 1914.

Observations made in Washington state.

402. **Couffer, U. G.** The Sewickley, Pennsylvania, plan. Journal of education, 79: 257–58, March 5, 1914.

Describes the system followed at Sewickley, Pa., which is similar to the Gary system, but more suitable to the course of study in use in Sewickley.

403. **Craighead, E. B.** Reply to Mr. James J. Hill. Inter-mountain educator, 9: 15–18, February 1914.

"Mr. Hill recently gave severe criticism of the educational institutions of the country in a speech at New Haven. Replies from newspapers have come from every section of the country. The following are extracts from a speech delivered by President Craighead at the dedication of the new high school at Billings, Mont."

404. **Eliot, Charles W.** Present problems of education. Educational review, 47: 237–48, March 1914.

Address delivered at the installation of Dr. J. H. Finley, as commissioner of education of the state of New York, at Albany, N. Y., January 2, 1914. Emphasizes instruction in economics to fit students for public service of an efficient and honest character; vocational training, etc.

405. The friendly visitor in Rhode Island's capital city. Normal instructor, 23: 30–31, March 1914.

The author characterizes Providence, R. I., as a pioneer in educational movements, and tells of the many novel plans in use in the schools.

406. **Howland, Sarah M.** In New York's ultra modern schools. Popular educator, 31: 368–71, March 1914.

Second article in series, discussing some features of the Ethical culture school.

407. **Kunkle, Stewart.** The school of the new era in China. Chinese recorder, 45: 90–93, February 1914.

408. **Lane, Winthrop D.** Tilts of the schoolmen at the Richmond conference. Survey, 31: 746–49, March 14, 1914.

A review of the proceedings of the National council of education and the Department of superintendence of the National education association.

409. **Lewis, H. W.** The Vermont educational survey. American school board journal, 48: 18–20, 66, March 1914.

410. **Ohio state school survey commission.** Report to the governor of Ohio. A cooperative field study conducted by Horace L. Brittain, director of survey, New York training school for public service. Columbus, Ohio, The F. J. Heer printing co., 1914. 352 p. illus. 8°.

An intensive study of 659 rural village schools in 88 counties, and an extensive study of 9,000 school rooms and of 395 school systems; participated in by 44 professors in professional schools for the training of teachers and 116 students in these institutions, most of whom had had experience in rural school teaching, 395 superintendents of schools and other school men and women, and 9,000 teachers who supplied information to the commission.

411. Eine schuldebatte im reichstage. Aus den reichstagsverhandlungen vom 6. Februar. Pädagogische zeitung, 43: 137–39, February 19, 1914.

A debate in the German Reichstag on the proposition to develop the Imperial school commission into an Imperial office. Interesting because the situation with respect to national standards of education in Germany is somewhat similar to the present situation in the United States.

412. **Wright, Richardson.** Siberian education. Catholic world, 98: 740–48, March 1914.

Describes the University of Tomsk, etc.

PEDAGOGICS AND DIDACTICS.

413. **Bagley, W. C.** Fundamental distinctions between vocational and liberal education. School and home education, 33: 239–45, March 1914.

Also in Journal of education, 79:339–43, March 26, 1914.

Read before the Department of superintendence at Richmond, Va., February 25, 1914.

414. **Bucke, W. Fowler.** The school and its problems; a syllabus and bibliography. Geneseo, N. Y., The author, 1914. [18] p. 8°.

"Arranged to correlate the course in school economy and school law with the critic work in the Training school, and adapted to the material in the State normal school library, Geneseo, N. Y."

415. **Butcher, T. W.** The new education. Kansas school magazine, 3: 22–27, February 1914.

This address is a "contribution to Kansas educational literature and a clear statement of the policies of the school, which can not fail to interest teachers generally. It is a strong, manly, advanced announcement of the new view of education."—Editor.

416. Für und wider die nationale einheitsschule. Allgemeine deutsche lehrerzeitung, 66: 97–100, February 27, 1914.

417. **Johnston, Charles Hughes.** Education and the emotions. School and home education, 33: 204–7, February 1914.

Abstract of a talk delivered before the Illinois state teachers' association, Springfield, December 30, 1913.

418. **Lull, Herbert G.** The expanding elementary school. American schoolmaster, 7: 97–106, March 1914.

Writer concludes: "If we persistently ask the question, What are the instrumental values required in the child's individual and social adjustments? we shall have a tangible working formula by which to test the efficiency of our instruction, as well as for testing the course of study."

419. **Meumann, Ernst.** Zur frage der erziehungsziele. Zeitschrift für pädagogische psychologie, 15: 1–9, January 1914.

"The pedagogy of our time is in danger of being wrecked by the new ideas and new proposals for *reform, revolution,* and the like."

420. **Oldendorff, Paul.** Rudolf Euckens philosophie als ausdruck eines neuen kulturwillens. Pädagogisches archiv, 56: 65–70, heft 2, 1914.

421. The other side. Atlantic monthly, 113: 357–62, March 1914.

Contends that "the incredulity of science in contemplating philosophy, art, literature, as part of the educational curriculum, is full of menace." Present age fast losing the habit of mind that fosters idealism.

422. **Pearson, Francis B.** The evolution of the teacher. Columbus, Ohio, The Heer press, 1914. 254 p. 12°.

"An attempt to interpret some of the basic principles of pedagogy in terms of every-day schoolroom experience."

423. **Pitts, Ralph S.** Some menaces to education, potential in the "movies." Colorado school journal, 29: 6–11, February 1914.

Delivered before the Colorado schoolmaster's club, Friday, January 23, 1914.

The author claims that the "movies" may be instructive, but that they are not educative.

424. **Russell, James E.** Outlines of a practical education. Good housekeeping, 58: 339–44, March 1914.

A discussion of the ideals of education, as well as the practical. Education's true aim.

425. **Sanders, Frederic W.** The organization of education. Education, 34: 428–35, March 1914.

Continued from February number. Treats of general plan of organizing the schools. To be continued.

426. **Williams, A. M.** Philosophy and education. Educational review, 47: 269–78, March 1914.

Shows the indebtedness of education to philosophy, and "the consequent need that in training centers students should be enabled to see how philosophy 'works' in a practical science like education."

427. **Witte,** *Pastor.* The education of Karl Witte, or the training of the child; edited, with an introduction, by H. Addington Bruce. Tr. from the German by Leo Wiener. New York, T. Y. Crowell company [1914] xl,312 p. 8°.

The original of this book is Karl Witte, oder erziehungs- und bildungsgeschichte desselben, written by Pastor Witte nearly a century ago, to describe the education of his son. The editor says that "it must unquestionably be regarded as one of the most inspiring and helpful contributions ever made to the literature of education." Witte's fundamental principle is that the education of the child should begin with the dawning of the child's intelligence.

EDUCATIONAL PSYCHOLOGY, CHILD STUDY.

428. **Corbin, Alice M.** The school of childhood, University of Pittsburgh. Kindergarten review, 24: 423–35, March 1914.

429. **Hahn, H. H.** *and* **Thorndike, E. L.** Some results of practice in addition under school conditions. Journal of educational psychology, 5: 65–83, February 1914.

"Children of the fourth, fifth, sixth, and seventh grades were given an initial test of 15 minutes in adding columns of ten one-place numbers, a practice period of 90 minutes divided into smaller periods of various lengths, and a final test of 15 minutes. The results are presented in detail."

430. **Knox, Howard A.** A scale, based on the work at Ellis Island (N. Y.), for estimating mental defect. Journal of the American medical association, 62: 741–47, March 7, 1914.

Describes work for testing defective immigrants; tests for illiteracy, etc.

431. **Makower, A. A.** Untersuchungen über wachstum. Zeitschrift für schulgesundheitspflege, 27: 97–120, February 1914.

Gives tables of weight, height, etc., for school children at various ages and grades.

432. **Whipple, Guy Montrose.** Manual of mental and physical tests. 2d rev. and enl. ed. Part I: Simpler processes. A book of directions compiled with special reference to the experimental study of school children in the laboratory or classroom. Baltimore, Warwick & York, inc., 1914. xvi, 365 p. illus. 8°.

SPECIAL SUBJECTS OF CURRICULUM.

433. **Andress, J. M.** The teaching of hygiene below the high school. Elementary school teacher, 14: 325–30, March 1914.

Proposes certain reasons for "the failure of the teaching of hygiene in the grades below the high school." To be continued.

434. **Aylmer-Small, Sidney.** Failures in physics at the College entrance examination board—the causes and the remedies. School science and mathematics, 14: 205–10, March 1914.

435. **Brown, Joseph C.** *and* **Coffman, Lotus D.** How to teach arithmetic. A manual for teachers and a text-book for normal schools. Chicago, New York, Row, Peterson and company [1914] 373 p. 12°.

436. **Dressler, H.** *and* **Körner, K.** Der mathematische unterricht an den volksschulen und lehrerbildungsanstalten in Sachsen, Thüringen und Anhalt. Leipzig und Berlin, B. G. Teubner, 1914. v, 132 p. fold. tables. 4°. (Abhandlungen über den mathematischen unterricht in Deutschland veranlasst durch die Internationale mathematische unterrichtskommission, hrsg. von F. Klein. bd. V, hft. 4)

437. **Fish, Susan Anderson.** What should pupils know in English when they enter the high school? English journal, 3: 166-75, March 1914.

438. **Fitzhugh, Thomas.** A plea for Greek in the American high school. Virginia journal of education, 7: 206-208, February 1914.

Deals with the value of Greek in the last two years of a high school course.

439. **Graham, J. W.** A measure of progress in the mechanical operations of arithmetic. Elementary school teacher, 14: 348-49, March 1914.

Suggests the use of a pendulum suspended by a cord about 4 feet in length, and swung clear of the wall. Explains use of this device.

440. **Hossann, K.** Heimatprinzip und heimatkunde. Archiv für pädagogik, 2: 250-61, February 1914.

Discusses the local-interest principle and its application in instruction.

441. **Kelsey, Francis W.** The nineteenth Michigan classical conference. School review, 22: 182-88, March 1914.

Résumé of proceedings.

442. **Matthews, Pauline E.** Report of experiment on the value of plays and games in arithmetical drill. Elementary school teacher, 14: 319-24, March 1914.

Aim of experiment: "(1) To prove that more ground may be covered than is required by our course of study; (2) to determine the effects of plays and games in arithmetical drill."

443. **Opdycke, John B.** A word for high school English. Journal of education, 79: 231-34, 242-44, February 26, 1914.

A constructive reply to some destructive criticism, with a suggestion or two.

444. **Sensenig, Barton.** An outline of third-year work in arithmetic with methods. Volta review, 16: 154-59, March 1914.

Third of a series of articles on educational methods.

445. **Steeper, H. T.** The status of history teaching in the high schools of Kansas. School review, 22: 189-91, March 1914.

Gives statistics of enrollment in subjects; number of pupils enrolled, etc.; also statistics regarding the preparation of teachers.

446. **Trost, W.** Die mathematischen fächer an den niederen gewerblichen lehranstalten in Deutschland. Leipzig und Berlin, B. G. Teubner, 1914. 150 p. illus., diagrs. 4°. (Abhandlungen über den mathematischen unterricht in Deutschland veranlasst durch die Internationale mathematische unterrichtskommission. bd. IV. hft. 5)

"Übersicht über die benutzte literatur": p. [148]-150.

447. **Sioussat, St. George L.** History in the high school curriculum. A plea for fair play. History teacher's magazine, 5: 87-91, March 1914.

A paper read before the Association of colleges and secondary schools of the Southern states, at Knoxville, Tennessee.

448. Symposium on the scope of biological teaching in relation to new fields of discovery. Science, 39: 371-85, March 13, 1914.

Articles by M. F. Guyer, M. A. Chrysler, and G. H. Parker. Discusses among other things the problem of eugenics.

449. **Watkins, D. E.** Group systems in interscholastic debating. Education, 34: 416-20, March 1914.

Says that the more recent forms of group debating among high schools produce more of good than of evil.

450. **West, Andrew F.** Greek at Princeton. Educational review, 47: 279–90, March 1914.

Shows the fine results of the study of Greek, with statistics of the comparative record of candidates for the degrees of A. B., Litt. B., and B. S. Writer says: "Our bachelors of arts show in general a clear superiority in scholarship over candidates for the other bachelor's degrees.

KINDERGARTEN AND PRIMARY SCHOOL.

451. The advantages of kindergarten training. Kindergarten review, 24: 436–44, March 1914.

"In June, 1913, a circular letter was sent out by United States Commissioner Claxton to kindergarten supervisors, asking for information in regard to the advantages of kindergarten training." This article gives some of the replies.

452. **Brisby, Drusie P.** The Montessori method. Educational foundations, 25: 354–61, February 1914.

How the Montessori method was used in combination with other methods and taught in a little country town.

453. **Craig, Clara E.** The Montessori system of child culture. A report presented to the State board of education. [Providence] Department of education, State of Rhode Island, 1913. 16 p. 8°. (Rhode Island education circulars)

Observations made and recorded in Rome, Italy, where, acting as the official representative of the Rhode Island State board of education, the writer was a member of the training class directed by Dr. Maria Montessori, from January 15 to May 15, 1913.

454. **Hill, Patty Smith,** *ed.* Experimental studies in kindergarten theory and practice. New York city, Teachers college, Columbia university, 1914. 70 p. illus. 8°. (Teachers college record, vol. XV, no. 1)

CONTENTS.—Introduction, by Patty S. Hill.—Reasoning in early childhood, by John Dewey.—Development of reasoning in young children, by Meredith Smith.—Play motive and experimental method in kindergarten occupations, by Grace L. Brown.—Use of materials in the kindergarten, by Julia W. Abbot.—Principles underlying the organization of kindergarten materials, by Luella A. Palmer.—The gifts, by Luella A. Palmer.

455. The kindergarten movement in Springfield. Kindergarten review, 24: 343–49, February 1914.

History of the early days of the kindergarten in Springfield, Mass.

456. **Saffiotti, F. Umberto.** Montessori's pädagogischer versuch der *case dei bambini* in der kindergartenbewegung. Zeitschrift für pädagogische psychologie, 15: 9–16, January 1914.

An unusually clear, brief statement of Montessori's work.

RURAL EDUCATION.

457. **Ashbee, C. R.** The Hamptonshire experiment in education. London, G. Allen & company, ltd., 1914. xi, 166 p. 12°.

The Hamptonshire experiment is a practical attempt to arrive at an educational policy for a given area, mainly agricultural, in rural England.

458. **Curtis, Henry S.** Play and recreation for the open country. Boston, New York [etc.] Ginn and company [1914] xvi, 265 p. illus. 12°.

CONTENTS.—Introduction.—Part I: Play in the home and its environs.—Part II: Play at the rural school.—Part III: Recreation in the rural community.—Part IV: The rural social center.

A useful book on a timely topic.

459. **Farwell,** *Mrs.* **Cecilia.** Country schools. The bugbear of taxation. American motherhood, 38: 185–89, March 1914.

460. **Miller, James Collins.** Rural schools in Canada: their organization, administration and supervision. New York city, Teachers college, Columbia university, 1913. xi, 236 p. 8°. (Teachers college, Columbia university. Contributions to education, no. 61)

Bibliography of rural education in Canada, Great Britain and Europe, United States: p. 227–36.

461. **Weaver,** *Mrs.* **Charles P.** School improvement league work in rural Kentucky. School progress, 4: 501–4, February 1914.

SECONDARY EDUCATION.

462. **Bachman, Frank P.** The mission of the high school in the community. Education, 34: 405–15, March 1914.

Writer would limit "the mission of the high school in rural districts to preparing country children to live and work in the country, and would make its primary mission in the small city and in the city of size the giving of young people an education which has a broad basis in science, literature, history, and art, and yet prepares directly for entrance upon life pursuit."

463. **Brown, H. A.** The reorganization of secondary education in New Hampshire. School review, 22: 145–56, March 1914.

Reorganization has taken "the form of (1) a readjustment in the content of the program of studies and (2) a changed conception of the teaching process." First of a series of articles.

464. The high school fraternity. American educational review, 35: 227–28, February 1914.

465. **Holley, C. E.** The influence of family income and other factors on high-school attendance. School and home education, 33: 222–24, February 1914.

A report from the Seminary in educational administration, School of education, University of Illinois, 1913.

466. **McCoy, William Taggart** *and* **Harley, Theodore Lincoln.** Studies in secondary education. Salaries and teaching conditions. [Chicago, 1914] 24 p. fold. table. 8°.

Reprinted from Educational bi-monthly, 8: 249–72, February 1914.

"This study of teaching conditions in the high schools of a representative list of American cities grows out of an inquiry begun in September, 1911, by a committee of the High school teachers club of Chicago, which was working for certain readjustments and increases in pay."

467. **Roger, Maurice.** Le réforme de l'enseignement moyen en Belgique (2^e ptie.) Revue pédagogique, 64: 117–34, February 1914.

468. **Snyder, Henry.** A high school that trains the hand as well as the mind. American city, 10: 119–24, February 1914.

Describes the educational activities of the William L. Dickinson high school, Jersey city, N. J. Illustrated. The pupils of this institution are not forced "to follow fixed and invariable courses of study, but the courses are fitted or adapted to the pupils." Vocational studies are emphasized.

469. **Whitney, F. L.** The junior high school idea in the small town. American school board journal, 48: 11–12, March 1914.

The aim of this article is to show how the junior high-school idea may be used effectively where the limitations as to available rooms and teachers are very apparent. It will probably be of interest to superintendents in small towns who are contemplating the reorganization of their upper grades along departmental lines.

TEACHERS: TRAINING AND PROFESSIONAL STATUS.

470. **Jenkins, Frances.** Adjusting the normal school graduate to a city system. American schoolmaster, 7: 49–56, February 1914.

Paper read before the Normal school department of the National education association, at Salt Lake City, July 9, 1913.

471. **Kennedy, Joseph.** Essentials in the professional preparation of teachers. American schoolmaster, 7: 64–69, February 1914.

"Paper given in discussion of the article by Prof. Fred G. Fox on The special qualifications of a high school teacher, as published in the January number of the American schoolmaster."

472. **Kesseler, Kurt.** Warum muss der pädagoge idealist sein? Pädagogische warte, 21: 131–36, February 1, 1914.

473. **Poore, W. A.** The employment of teachers. New Mexico journal of education, 10: 5–7, February 15, 1914.

Deals principally with the selection of capable teachers.

474. **Witmer, Lightner.** The scope of education as a university department. Psychological clinic, 7: 237–49, February 15, 1914.

HIGHER EDUCATION.

475. **Butler, Nicholas M.** Academic freedom. Educational review, 47: 291–94, March 1914.

Says that "the limitations upon a university teacher are those imposed by common morality, common sense, common loyalty, and a decent respect for the opinions of mankind."

Originally published in Public ledger, Philadelphia, Pa., January 13, 1914.

476. **Coggeshall, Thomas.** A Harvard man's impressions of Oxford. Harvard illustrated magazine, 15: 239–45, February 1914.

Author is Frederick Sheldon fellow at Oxford.

477. **Grosvenor, Edwin A.** The morals of the college man. American educational review, 35: 167–70, January 1914.

An address delivered before the College of William and Mary.

478. **Hadley, Arthur T.** What do the social changes in American life demand of the higher education? Yale alumni weekly, 23: 677–78, March 13, 1914.

An address before the Religious education association in Woolsey hall, March 5, 1914.

479. The Harvard-Technology agreement. Harvard graduates' magazine, 22: 387–92, March 1914.

Articles of agreement and statements by Presidents Lowell and Maclaurin.

480. **Hellems, F. B. R.** The professorial quintain. Forum, 51: 321–32, March 1914.

A defence of American universities. Writer says: "The European universities aim at a hundred, while we aim at a million. Inevitably we fail; but our failure may be finer and brighter with promise than their success."

481. **James, Edmund J.** Why Washington wanted a national university. Independent, 77: 308–9, March 2, 1914.

Writer says that "all the problems which we are trying to solve today, so far as universities may be able to contribute to their solution, would be in a distinctly advanced stage if such an institution had been organized and properly supported."

482. **Lockwood, Laura E.** Summer school at Grenoble. Education, 34: 421–27, March 1914.

Advantages of University of Grenoble, France, as a place for linguistic studies.

483. **Mérimée, Henri.** L'université espagnole d'après un universitaire espagnol. Revue internationale de l'enseignement, 67: 54–59, January 1914.

A review of Universidad literaria de Oviedo. Discurso leido en la solemne apertura del curso académica de 1912-1913 por el doctor D. Federico de Onis y Sánchez.

484. Shall Vermont give aid to its colleges? Independent, 77: 329–31, March 9, 1914.

Résumé of a report on educational conditions in Vermont, made by a group of experts in the employ of the Carnegie foundation, which advises against appropriations for higher education.

485. **Thwing, Charles Franklin.** The American college: what it is, and what it may become. New York, The Platt & Peck co. [1914] 294 p. 8°.

Contents.—I. The purpose.—II. The force.—III. The student.—IV. The methods and tools.—V. The conditions.—VI. The tests and results.

486. **Wiser, Willis G.** Yale memories, by "Bill" Wiser. New Haven, The Tuttle, Morehouse & Taylor co., 1914. 144 p. illus. 12°.

Reminiscences of a policeman stationed on the Yale campus.

487. **Wolfe, A. B.** Tests of college efficiency. Educational review, 47: 217–36, March 1914.

Review of a report of a special committee of the Oberlin college faculty, 1908. Criticising the document, the writer says there is "an inordinate emphasis upon mechanical devices and administrative details." But on the whole it contains many valuable suggestions for college faculties that feel disposed to take up the question of efficiency.

SCHOOL ADMINISTRATION.

488. **Bunker, Frank F.** The better articulation of the parts of the public school system. Educational review, 47: 249–68, March 1914.

Describes in full the reorganization plan under which the school department of Berkeley, Cal., is now working, which went into operation in January 1910. The twelve school grades or years are broken into three groups; "the first group, elementary, to comprise the first six years of school life; the second, the lower high school, to comprise the seventh, eighth, and ninth years; and the third group, the upper high school, to embrace all pupils of the tenth, eleventh, and twelfth years."

489. **Elliott, Edward C.** State school surveys. American school board journal, 48: 9–10, 62, March 1914.

"The author of the present article has had perhaps a better opportunity than any other educator to observe recent school-survey events and to formulate principles which necessarily must underlie any successful work in this direction. His suggestions are of more than passing interest, particularly in view of the fact that surveys are proposed in several important states."—Editor.

490. **Hotchkiss, H. V.** School supervision. Ohio educational monthly, 63: 103–10, March 1914.

Gives the many duties of a superintendent.

491. **Moon, A. H.** The school book question. School and home, 6: 11–14, February 1914.

The text book situation in Georgia.

492. The new school code for Ohio. Ohio teacher, 34: 340–54, March 1914.

Gives the full text of each school measure enacted by the General Assembly of Ohio, February 1914.

493. **Schwartz, E.** Wie soll der neue grundlehrplan von Gross-Berlin eingeführt werden? Pädagogische zeitung, 43: 117–21, February 12, 1914.

A significant comparison of curricula in Berlin schools for 1902, 1906, and 1913, in arithmetic, geometry, language, history, geography, nature study, science and religion.

SCHOOL MANAGEMENT.

494. **Anderson, *Mrs.* Jane Pollock.** The traditional examination. School science and mathematics, 14: 193–204, March 1914.

Read before the Mathematics section of the Central association of science and mathematics teachers, Des Moines, November 28, 1913.

The author opposes the traditional or final examination and gives ten evils which arise from it.

495. **Blakesley, O. J.** A study in gradings and promotions. Wyoming school journal, 10: 151–55, February 1914.

Read before the Wyoming state teachers' association, January 1914.

A compilation of material gathered from a correspondence carried on with a number of schools East and West. Gives the systems of grading used in many places.

496. **Brooks, E. C.** The need of a new classification in our city schools. North Carolina education, 8: 10–11, March 1914.

Discusses the system of classification and gradation found in Portland, Oregon.

497. **Bureau of municipal research, *New York.*** Help-your-own-school suggestions; extracts from a field study of p. s. 188B Manhattan made at the request of Principal Edward Mandel, by the Bureau of municipal research. New York, N. Y., 1914. 32 p. illus., diagrs. 8°. (Municipal research, no. 31, February 21, 1914)

498. **Campbell, Everett E.** A study of retardation and class standing on the basis of home language used by pupils. Elementary school teacher, 14: 331–47, March 1914.

Graphic charts and statistical tables. Writer says he finds that "the language factor is not of sufficient importance to be considered as one of the causes of retardation, or as determining relative class standing of pupils." Article concluded from previous number.

499. **Holmes, Clay W.** A modern school savings plan. American school board journal, 48: 13–14, 64, March 1914.

Gives an account of the school savings plan in use in Elmira, New York.

500. **Wilson, H. B.** Promoting pupils. Western school journal, 30: 59–60, February 1914.

This is a copy of a news-bulletin from the Superintendent of schools of Topeka, Kans., to the principals containing instructions for teachers for studying the conditions which have been the cause of nonpromotion.

SCHOOL HYGIENE AND SANITATION.

501. **Crampton, C. Ward.** The significance of physiological age in education. Washington, Government printing office, 1913. 13 p. 8°.

Reprinted from the Transactions of the fifteenth International congress on hygiene and demography.

502. **Crowley, Ralph H.** The present position of the school hygiene movement in England. New England medical gazette, 49: 82–93, February 1914.

The establishment of the school medical service is exercising a considerable influence on educational methods and practice in England.

503. **Goodhue, Stoddard.** Can you see straight? Good housekeeping, 58: 361–68, March 1914.

Remedy for eye-strain in children. Work in schools, etc.

504. **Rapeer, Louis W.** Needed health knowledge and how to get it. School and home education, 33: 251–55, March 1914.

Contains suggestive reading for teachers and superintendents.

505. **Roach, Walter W.** An open-window experiment. Primary plans, 11: 14, March 1914.

A comparison between pupils taught in an ordinary-class room and in an open-air class-room.

506. **Terman, Lewis M.** The effects of school life upon the nutritive processes, health and the composition of the blood. Popular science monthly, 84: 257–64, March 1914.

Discusses effects of school life upon growth; prolonged mental strain upon nutritional processes; school pastimes on respiration; and school as a cause of morbidity. Followed by valuable bibliographical references.

SEX HYGIENE.

507. **Keller, Paul G. W.** The teaching of sex hygiene in high schools. American schoolmaster, 7: 70–74, February 1914.

508. **Reichel, Walther.** Über geschlechtliche erziehung. Pädagogisches archiv, 56: 80–97, heft 2, 1914.

Discusses introduction of sex hygiene at various grades in the school.

PHYSICAL TRAINING.

509. **Beegle, Mary Porter.** Hygiene and physical education in trade schools for girls. American physical education review, 19: 73–93, February 1914.

Describes physical education and hygiene in the Manhattan trade school for girls in New York city.

510. **Bruce, Lillian Hortensia.** Posture in the Chicago public schools. Educational bi-monthly, 8: 227–37, February 1914.

A compilation of opinions of men and women in Chicago, who are spending their time and effort in the Department of physical education in the high schools.

511. **Curtis, Henry S.** Physical training in normal schools. American physical education review, 19: 94–112, February 1914.

512. **Lee, Joseph.** Restoring their play inheritance to our city children. Craftsman, 25: 545–55, March 1914.

Work of the playground and recreative association. Children's games, etc.

513. **Murphy, Michael C.** Athletic training; ed. by E. R. Bushnell, with an introduction by R. Tait McKenzie. New York, C. Scribner's sons, 1914. xxxiv, 174 p. illus. 12°.

514. **Richards, Florence H.** Physical training with special corrective work and hygiene (including sex hygiene) in girls' high schools. School review, 22: 157–64, March 1914.

Shows enthusiasm of girls over work in domestic sanitation and eugenics.

SCHOOL GARDENS.

515. **Gray, Mary Richards.** How to organize a school garden. School-arts magazine, 13: 489–95, March 1914.

See also Organization of school gardens, by same author, in Popular educator, 31: 387, 390–92, March 1914.

516. **Thomas, Ernest K.** Planning a school garden. School century, 9: 301, March 1914.

SOCIAL ASPECTS OF EDUCATION.

517. **Greenwood, James M.** The social function of the school and getting at it. Missouri school journal, 31: 99–104, March 1914.

518. **King, Irving.** The vocational interests, study habits, and amusements of the pupils in certain high schools in Iowa. School review, 22: 165–85, March 1914.

Discusses part-time employment and other vocational problems. Statistical tables given.

519. **Lang, Ossian.** A vitalizing force of democracy. The common school as a social center. Rural manhood, 5: 106–9, March 1914.

520. **Shields, Thomas Edward.** Parental cooperation. Catholic educational review, 7: 240–52, March 1914.

The author claims that many of the defects in current education heretofore charged to the school should be laid at the door of the home, and that parents are not only responsible for the education of their children during the preschool period, but also during their elementary and secondary training and college days.

CHILD WELFARE.

521. **Dean, Arthur D.** Child-labor or work for children. Craftsman, 25: 515–21, March 1914.

Discusses the problem: "What shall we do when we *stop working children*, and how shall we develop an educative process which will *keep children working?*"

MORAL EDUCATION.

522. **Fischer, Aloys.** Moralpsychologische untersuchungsmethoden. Neue bahnen, 25: 245–68, March 1914.

523. **Trams, Albert F.** Teaching children ideals of right living. Child-welfare magazine, 8: 256–59, March 1914.

RELIGIOUS EDUCATION.

524. **Barton, James L.** Educational missions. New York, Student volunteer movement for foreign missions, 1913. 271 p. illus. 12°.

525. **Clarke, James E.** The place and function of the Christian college. New York, 156 Fifth avenue, College board of the Presbyterian church in the U. S. A. 12 p. 8°.

526. **Heniger, A. M. H.** Making Bible stories plain. Good housekeeping, 58: 331–38, March 1914.

Stage representations of Bible scenes enacted in Sunday schools. Valuable lessons drawn.

527. **Israel, Henry.** Our nation in training for religion; the country pastor's share in it. Rural manhood, 5: 45–48, February 1914.

528. **Kirsch, Felix M.** Von der religionslosen schule in Amerika. Donauwörth, L. Auer [1914] p. 245–55. 8°. (Pharus, katholische monatschrift für orientierung in der gesamten pädagogik. Sonder-abdruck, V. jahrgang, March 1914)

By Rev. F. M. Kirsch, O. M. Cap., Herman, Pa.

529. **Tenney, Albert F.** How to read the Bible in the public schools. Public speaking review, 3: 172–76, February 1914.

Enlarged from an address given before the New York state association of elocutionists, at Syracuse, November 25, 1913.

MANUAL AND VOCATIONAL TRAINING.

530. **Ayres, Leonard P.** Some conditions affecting problems of industrial education in 78 American school systems. New York city, Division of education, Russell Sage foundation [1914] 22 p. 8°. (Publication E135)

Data concerning 22,027 13-year-old boys in 78 cities and the fathers of these boys, gathered with the object of securing a more definite fact basis for thought and action in the field of industrial education. A résumé of these studies also appears in the Elementary school teacher, 14: 313–18, March 1914.

531. **Canada. Royal commission on industrial training and technical education.** Report of the commissioners. Ottawa, printed by C. H. Parmelee, 1913. parts 1–3. 3 v. illus. 4°

Part 4 not yet published.

Presents the results of investigations concerning all phases of industrial, technical, and vocational education, both elementary and advanced, in Canada, Great Britain, France, Germany, Switzerland, and the United States. Includes manual training, nature study, school gardening, agricultural education, household science, commercial and business education, apprenticeship systems, schools for fishermen, schools of navigation, and schools for tanning and leather industries.

532. **Crawshaw, F. D.** The present day opportunity in manual and industrial arts. Industrial-arts magazine, 1: 79–83, March 1914.

The purpose of the article is to urge administrators as well as teachers to study the problem of teaching industrial work in schools, so that we may recognize the place and work of the special school and be duly impressed with the force of the argument for it.

533. **Kimes, F. M.** Vocational progress and legislation. Progress, 3: 228–31, February 1914.

534. **Mathews, John L.** Dynamic education. Harper's magazine, 128: 616–25, March 1914.

Deals with industrial education in various European countries, especially Germany.

535. **Moseley, Eunice.** Practical education. Colorado school journal, 29: 20–32, February 1914.

Read at the Colorado state teachers' association, November 25, 1913.

536. **National society for the promotion of industrial education.** The selection and training of teachers for state-aided industrial schools for boys and men. (Special report) New York city, National society for the promotion of industrial education, 1914. 112 p. 8°. (*Its* Bulletin no. 19)

537. **Redfield, William C.** The importance of vocational training. Indian school journal, 14: 303–4, March 1914.

538. **Rindge, Fred H.,** *jr.* 3,500 college students humanizing industry. World's work, 27: 505–11, March 1914.

Describes the industrial service movement among college men. Undergraduate volunteers teach English in thirty lessons to foreigners; others join American mechanics "to give the theoretical knowledge the workmen want and to get the practical knowledge that the workmen have."

539. **Thompson, George.** Prevocational education in England. Vocational education, 3: 239–48, March 1914.

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UNITED STATES BUREAU OF EDUCATION

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PHYSICAL GROWTH AND SCHOOL PROGRESS

A STUDY IN EXPERIMENTAL EDUCATION

By BIRD THOMAS BALDWIN
PROFESSOR OF PSYCHOLOGY AND EDUCATION
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DEPARTMENT OF THE INTERIOR

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LETTER OF TRANSMITTAL.

Department of the Interior,
Bureau of Education,
Washington, November 4, 1913.

Sir: There is a growing conviction on the part of teachers and students of education that there must be a close relation between the physical and mental development of children and that this relation must be known and respected. As yet, however, we have little definite knowledge on the subject. Guesses and theories based on scant and unscientific observations are easily made and are numerous. Sound knowledge can be had only by careful scientific investigation—thoughtful interpretation of accurate observations made under proper control. The accompanying manuscript, by Dr. Bird T. Baldwin, professor of psychology and education in Swarthmore College, embodies the results of a study of the physical growth and the school standing of a group of boys and girls between the ages of 6 and 18 years observed consecutively and makes, I believe, a valuable contribution to the literature of this subject. I recommend that it be published as a bulletin of the Bureau of Education.

Respectfully submitted.

P. P. Claxton,
Commissioner.

To the Secretary of the Interior.

FOREWORD.

It should now be recognized that every child has at least five parallel ages: A *chronological* age, in years, months, and days; a *physiological* age, indicative of physical growth and maturity; a *mental* age, significant of intellectual capacity and ability; a *school standing*, or *pedagogical*, age, denotative of relative position in school grades; and a *moral* or *religious* age. These ages may or may not coincide in their stages of development. In a first-class school the school standing, or pedagogical, age and the mental age would be the same.

This monograph aims to present the results of a study of the physical growth, or *physiological* age, and the *school standing* of a group of boys and girls from 6 to 18 years of age when observed consecutively.

The scope or field of the investigation includes:

(1) A series of norms based on the height and age distribution, and weight and age distribution; the averages and average variations of individual increments of growth in height, weight, and lung capacity; and the individual growth curves in height, weight, and lung capacity, with health notes and weight-height and vital indexes.

.(2) An investigation on school standing in marks, grades, and ages.

(3) The relation of physical development in height, weight, and lung capacity to school standing.

(4) A brief historical summary of the work in this field, with an annotated bibliography.

The chief value of the monograph consists in the fact that it is the first attempt to follow consecutively the same groups of children through the elementary and high schools, either in physical growth or school standing, or the relation of the two. Since the curves and records represent individual histories, they will be of permanent value. The monograph also aims to give the present status of the problem of physical growth.

The contents of the monograph are discussed from four points of view, in order to meet the needs of the wide range of interests of the individuals into whose hands it may fall. The aim, scope, methods, and results of the investigation are first discussed under the headings: (I) *The general problem,* which suggests the salient points without data or proof; the second section, (II) *The investigation,* includes a detailed treatment with specimen charts and tables with proofs and comments; the third section, (III) *The statistical material*, gives practically all of the data for detailed study as a basis for further investigations; and then follow the fourth section, (IV) *An historical summary of investigations in physical growth*, and a fifth section, (V) *An annotated bibliography of 336 titles.*

The conclusions drawn from the study are limited to the data at hand, which have been obtained from a detailed study of a limited number of individuals in a special type of schools where the facilities for measurement are excellent and where much attention is given to physical examinations and remedial training. The children, as a rule, come from "well-to-do" families. The heredity and health notes are given as far as possible for all whose growth curves are plotted. The writer has been collecting his data for several years, and no effort has been spared to secure the best available material in this country.

PHYSICAL GROWTH AND SCHOOL PROGRESS.

I. THE GENERAL PROBLEM.

Teachers, psychologists, physicians, and parents are necessarily concerned with the physical growth and mental development of boys and girls. So much has been written within these two fields that we are now in a position to ask more detailed and specific questions in regard to particular periods or nodes of development. In our modern work in experimental education we greatly need consecutive studies through a long series of years, giving full, accurate, and systematic accounts of the physical growth and school progress of the same individuals. In previous studies, with a very few exceptions, it has been the method to measure or study a large group of children for one age, another group for the following age, another for the next subsequent age, and so on for the series included, and to derive a general average or conclusion from these data. For example, 1,000 children were measured for 6 years of age, another 1,000 at 7 years of age, and another at 8, and so on. The average for these groups gave some insight into how one child grew from year to year.

The present investigation makes an individual study of children from three of the very best schools in America, and presents consecutive observations as far as these were available. It aims to show, aside from the conclusions that the data furnish, the urgent need and necessity of life histories in all phases of educational work, if our subject is to be developed scientifically. The period covered is from 6 to 18 years of age, and the children have been under school medical inspection, directed play, and physical education. That these factors are important educational agencies is shown by the fact that, on the average, these children from the Horace Mann School, the University of Chicago Elementary and High School, and the Francis W. Parker School are taller and heavier than any other group of children so far recorded among over a million studied. The 33,840 measurements are unusually good, since they have been made continuously on nude children by trained anthropometrists who recorded the age in days, the measurements in small units, and the various health notes.

Among the important questions that this monograph aims to help answer are the following: What is the normal rate of growth for a child within a given group? How do children grow from year to year? What are the periods of accelerated or delayed growth? What relation does the growth of any one age or period have to subsequent periods? Do children retain their relative positions in height, weight, and lung capacity throughout their school course? If so, will these individual studies help to anticipate how tall a normal child will be at any subsequent year? What is the relation of growth in height to weight, and the relation of growth in lung capacity to weight, since these are the best criteria of nutrition and robustness of an individual? Are some children more mature physiologically at a given chronological age than others? If so, what relation does this accelerated physiological maturity bear to growth? How is growth enhanced, how arrested?

We shall never be able to answer all these questions completely until we have complete individual histories for all classes of children, but the individual records and the growth curves which we have worked out should be of value for such comparative studies. The individual records are given in Tables 4, 5, and 13 to 22 and figures 1 to 28.

For purposes of comparison with a norm (or average child for this group) the distribution Tables 2 and 3 may be consulted, and also the averages in Table 3. The increments of growth or the amount the child grows from year to year, or half year to year, may be obtained from Tables 4 and 5, and the largest individual measurements with per cents of gain from Table 8. The general conclusions are given on page 69, and while they have a very general application in various directions, they are limited in their strictest validity to the data included in this investigation.

The second section (B) of the investigation follows the same individuals through their school subjects from grade to grade. The data consist of 21,682 final term marks from the Horace Mann and Francis Parker Schools. It must be recognized, since we are investigating the school standing age and since the promotions are based on marks, that these records must be taken at their face value, because they represent school practice and because they offer tangible criteria of the efficiency of the individual and of the school.

The 11 charts give graphically the average mark, the age, and school grade from year to year in the school progress. These conclusions may be found on page 79.

After the question of normal, accelerated, and retarded school progress has been discussed empirically, the relation of physical growth to school standing is taken up on pages 71–97 in regard to height, weight, and lung capacity, with educational corollaries. The statistical material follows, and after this the historical summary.

II. THE INVESTIGATION.

(A) PHYSICAL GROWTH.

1. THE DATA.

The investigation on physical growth, as here reported, is based on the consecutive measurements at yearly and half-yearly intervals, or both, of 861 boys and 1,063 girls from the University of Chicago elementary and high schools, the Francis W. Parker School of Chicago, and the Horace Mann School of Teachers College, Columbia University. The records include consecutive measurements on the same individuals for periods of from 3 to 12 years, giving a sum total of 12,500 measurements for height, 11,220 for weight, and 10,120 for lung capacity, or 33,840 measurements. In the general averages of the increments, the measurements of the Horace Mann School are for five or more consecutive years, and were taken, as a rule, at yearly intervals during the three fall months. The Francis W. Parker records were taken semiannually, during October and June, and the University of Chicago schools semiannually in about one-fifth of the records included and in the remainder annually. The individual records from these latter schools contain, in the distribution tables, a few consecutive measurements for periods of less than five years.

The measurements were made by the regular trained examiners and anthropometrists in the various schools, except in a few instances in the University of Chicago schools, where they were taken by the writer.[1] The children were nude, and the records for height were taken in millimeters or tenths of an inch; for weight they were recorded in decigrams or in tenths of a pound; for lung capacity deciliters or tenths of a cubic inch were used. At the Horace Mann School the unit of weight was changed from pounds to kilograms in 1905; at the University of Chicago schools kilograms and inches were changed to pounds and centimeters in 1904 and back to kilograms in 1910. The units also varied in a few cases at the Francis W. Parker School. This changing of units necessarily introduces a small error involved in the reduction of a fractional part of a large unit to a smaller unit, since it is more difficult to measure accurately with large units, and to further subdivide the unit after the measurement has been made increases any slight error involved in measuring.

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[1] The writer is indebted to Profs. Charles H. Judd, Walter F. Dearborn, and Frank N. Freeman for helpful suggestions in methods of undertaking the investigation; to Drs. Raycroft, J. Anna Norris, Walter D. Wood, William H. McCastline, Clement L. Vaughan, and to Jeannette Seibert and Miss Flora L. Cook for assistance in obtaining records. The following graduate students have helped to check some of the tabulated results: Misses Miriam E. Dozier, Carrie Saunders, and Julia Cooper, of the University of Texas, and J. A. Blackburn and Grace W. Greene, of Swarthmore College.

A large majority of the measurements were reported in millimeters, tenths of pounds, and tenths of cubic inches, and these units are used in the preparation of the tables and charts presented in this study.

2. METHODS OF TABULATION.

In order to facilitate methods for using the data and to obtain the yearly and half-yearly increments, each individual's records, together with the name or number, date of birth, and date of physical examination, were copied on small cards and later transferred to large sheets with the measurements and increments in opposite columns in order that the correlations between the initial measurement and the appended increments could be noted. This made it possible also to determine the effects of accelerated or arrested growth on succeeding periods, since a number of increments on the same individual were available.

Horace Mann School.

Name, ...; 2097 (boy); born June 2, 1899.

Date of measurement.	Jan. 9, 1903.	Oct. 27, 1903.	Feb. 3, 1905.	Nov. 1, 1905.	Nov. 19, 1906.	May 4, 1907.	Dec. 6, 1907.	Dec. 9, 1908.
Age (yrs. mo. da.)....	3—7—7	4—4—25	5—8—1	6—4—29	7—5—17	7—11—2	8—6—4	9—6—7
Weight..pounds....	36.25	40.50	45.75	47.90	54.24	56.54	59.72	66.44
Weight..kilograms..	16.50	18.37	20.75	21.73	24.20	25.70	27.10	30.20
Height .centimeters..	103.4	108.0	116.4	121.4	127.5	130.4	133.7	139.2
Lung capacity. cubic inches..	20	30	74	90	106	108	118	120
Lung capacity. liters.........	.33	.49	1.21	1.47	1.73	1.77	1.93	1.96
INDICES.								
Weight-height.......	.160	.170	.173	.178	.197	.197	.200	.217
Vital................	.019	.026	.057	.067	.071	.070	.071	.064

Height and weight measurements of Horace Mann boys, with yearly gains.[1]

			Gain.		*Gain.*		*Gain.*		*Gain.*
No. 1.									
Age (years).....................	14½	15		15½		16		16½	
Height (centimeters)	164.3			170.1	5.8			173.7	3.6
Weight (pounds)...............	102.0			111.4	9.4			12.1	9.7
No. 2.									
Age (years).....................	14½	15		15½		16		16½	
Height (centimeters)..........	171.7			175.8	4.1			176.2	.4
Weight (pounds)...............	134.5			140.5	6.0			149.5	9.0
No. 3.									
Age (years).....................	14½	15		15½		16		16½	
Height (centimeters)..........	159.2			168.7	9.5			175.0	6.3
Weight (pounds)...............	102.0			117.5	15.5			128.0	10.5

[1] The normal height of a boy 15 years of age is 164 centimeters, and the normal weight 106 pounds.

Specimen transfer sheet.

This method is illustrated on the increment sheets that follow—Tables 4, 5, and 13–22. For averages and average variations of increments, six-month intervals were used. For example: 12–12½, 12½–13, 13–13½, 12–13, 12½–13½.

To find the increments of growth in height, weight, and lung capacity for each individual, the ages at the time of measurement were first found for years, months, and days, but, in order to place the measurements for each individual into groups of yearly and half-yearly intervals, those made within three months and nine months above the year were considered as half years and the following interim, between nine months and the next three months, as full years. If two measurements fell within a six-months' period, the measurement nearest the age required by the interval was taken. No child's measurements, when placed in the yearly or half-yearly group, are more than three months from the exact age of the child, based on the date of last measurement and the date of birth. All measurements for more than a year's interval were necessarily eliminated in the calculation of the increment.[1]

3. HEIGHT AND AGE DISTRIBUTION.

The height and age distribution table includes records of three or more measurements of pupils in the University of Chicago schools and the Francis W. Parker School. The roman numerals refer to boys and those in italic to girls. The table otherwise is self-explanatory. In general, there is a fairly normal distribution of individuals slightly above the average or median height found by other investigators. These norms were found in order to determine the relative median heights and weights (i. e., the measurements above which and below which lie an equal number of individual measurements)[2] of the Chicago schools for a means of comparison with the groups of children studied by former investigators and for comparison with the norms used by Dr. Wood, of the Horace Mann School. The derived norms show, among other things, that the Chicago schools and the Horace Mann School form practically a homogeneous group in regard to height and age distribution of pupils. The differences of the two groups will be noted later, when a comparison of the growth curves of individuals is made.

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[1] The writer wishes to take this opportunity to emphasize the urgent need of a long series of consecutive measurements on the same group of individuals, taken at the same time of day, by the same examiner, at regular six-months' intervals from the child's birthday, using throughout uniform units of measurements.

[2] The formula is $m = \frac{n+1}{2}$.

TABLE 1.—*Height and age distribution—University of Chicago*

[Number of individuals—Boys, 501; girls, 703; total, 1,204.

Height.		Age in years.																					
		6		6½		7		7½		8		8½		9		9½		10		10½		11	
		B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.
Centimeters.	*Inches.*																						
115	45.276	2	*3*	2	*4*	3	*3*	1				1											
116		2	*2*	1	*8*	2	*4*			2	*3*		*1*	1	*1*								
117		2	*3*	1	*3*	2	*6*	3	*1*	1	*3*			1									
118		1	*3*	4	*4*	2	*8*	2	*3*	1	*2*		*1*		*1*								
119		3	*1*	2	*4*	2	*2*	1	*4*	1	*3*												
120	47.245	3		1	*1*	3	*3*	2	*4*	1	*6*	1	*2*	1	*1*	1		1					
121		1	*1*	1	*3*	3	*1*	4	*5*	3	*5*		*2*		*3*		*1*						
122		1	*1*		*2*	3	*7*	4	*2*	1	*6*	1	*8*	1	*2*		*2*	1					
123				4	*4*	3	*4*	2	*3*	2	*8*	1	*4*	2	*5*	2	*1*						
124			*1*	1	*2*	2	*4*	1	*6*	2	*7*	4	*5*	3	*4*		*4*	2				2	
125	49.213	2		1		3	*1*	6	*2*	3	*2*	1	*4*	2	*6*	2	*5*	2	*1*	1		1	
126				2	*2*	1	*1*	2	*2*	3	*9*	4	*11*	3	*6*	5	*4*	2		2	*1*	1	
127				1	*1*	1	*1*	3	*3*	4	*6*	2	*3*	3	*6*	1	*4*		*2*		*1*	1	
128					*1*	3	*4*	3	*1*	1	*3*	2	*6*	4	*5*	3	*6*	1	*5*	1	*1*	1	*1*
129						1	*3*	3	*1*	5	*5*	4	*3*	3	*3*	3	*7*	3	*2*	1	*4*		*3*
130	51.182		*1*			1		4	*2*	6	*5*	2	*6*	7	*5*	6	*8*	7	*5*	2	*2*	5	*1*
131						1			*3*	1	*2*	3	*1*	3	*6*	4	*9*	2	*7*	3	*3*	1	*1*
132				1				1	*5*	5	*2*	3	*2*	4	*8*	3	*9*	3	*5*	4	*4*		*1*
133							*1*	1	*1*	1	*2*	4	*2*	5	*5*	3	*2*	3	*6*	5	*2*	6	*3*
134								1		1	*5*	3	*2*	6	*1*	6	*3*	5	*9*	3	*8*	10	*4*
135	53.150									1	*2*	2	*1*	5	*3*	3	*3*	3	*10*	4	*5*	4	*4*
136							*1*			1		2	*1*	2	*4*	3	*3*	7	*8*	5	*6*	8	*3*
137												4	*4*	2	*4*	7	*3*	4	*4*	2	*7*	4	*8*
138										1		1	*1*	2	*3*	9	*1*	5	*8*	3	*9*	5	*9*
139										2		1		1	*2*	1	*2*	4	*4*	5	*1*	8	*11*
140	55.192											1		2	*2*	1		6	*2*	6	*6*	1	*9*
141														2		1	*4*	9	*2*	3	*4*	1	*9*
142															*1*	2	*2*	1	*5*	1	*4*	5	*2*
143																5	*1*	3	*1*	8	*4*	3	*6*
144																2	*2*	1	*2*	3	*2*	4	*2*
145	57.089									1						2	*1*	1	*1*	4	*3*	8	*5*
146													*1*					1	*1*	1	*2*	6	*10*
147															*1*	1			*2*	2	*1*	6	*4*
148																				6	*1*	4	*5*
149														1	*1*					1	*2*	1	*5*
150	59.056															1					*1*	3	*2*
151																						2	*1*
152																1					*1*		
153																		1				1	*1*
154																							*1*
155	61.023																						*1*
156																			*1*				
157																							
158																						1	
159																							
160	62.933																						
161																							
162																							
163																							
164																							
165	64.961																						
166																							
167																							
168																							
169																							
170	66.930																						
171																							
172																							
173																							
174																							
175	68.898																						
Number of individuals...		28	*41*	29	*60*	43	*68*	47	*64*	52	*87*	48	*71*	66	*89*	78	*87*	78	*93*	76	*85*	103	*110*
Median....................		116	*114*	119	*117*	121	*121*	125	*123*	128	*125*	131	*126*	131	*130*	134	*131*	136	*135*	139	*137*	139	*140*

elementary and high schools and Francis W. Parker School.

Number of measurements—Boys, 1,586; girls, 2,358; total, 3,944.]

Age in years.																												No. of cases.	
11½		12		12½		13		13½		14		14½		15		15½		16		16½		17		17½		18			
B.	G.	B.	G	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.
																												9	10
																												8	19
																												10	15
																												10	22
																												9	14
																												14	17
																												12	21
																												12	30
																												16	29
																												17	33
																												24	21
																												25	36
																												16	27
		1																										20	33
2																												25	31
1	1		1	1																								42	37
	1	2		1																								21	33
1	3	2				1										1												29	39
1	2	2	3	1	1	1		1										1										35	30
1																												36	32
	3	3	2	3	1	1	1			1																		30	35
4	3		1			2	1	1	1						1													34	33
3	3	5	5	3	2	1			1	1																		36	41
4	5	6	7	2	2	1	3	1		1				1				1										43	48
4	5	1	4	4	3	2	1	1	3	1																		35	36
5	6	8	9	3	5	3	1	2	1	1			1															39	42
3	6	6	3	2	10	4		1	2	2	3	2		1														37	43
4	3	5	5	4	8	2	3	1	4	2	3	1	2															28	42
3	5	7	7	6	2	2	5	3	1	3	1		1															43	34
4	5	5	10	2	2	4	6	2	2	2	1	1	1	1	1	1											1	32	37
5	6	9	3	6	4	4	5	2	6	3	2	1				1					1							47	37
2	6	6	8	7	4	4	4	4	2	4	6	1	2	1	2	1												38	48
1	4	10	8	1	7	6	4	1	5	2	1		2	1	4	3	1						1					34	44
2	4	4	2	4	6	4	4	1	5	5	6		1		2		2											30	36
3	9	6	6	2	2	5	11	4	3	4	8	1	2	2			3	1	1		1		1					31	55
1	4	7	7	6	3	4	4	3	3	6	4	4	6	1	8	1	5		1		1		1				1	37	51
4	1	1	6	2	5	2	9	3	4	5	6	2	2	3	11	2	1		3		2		2					26	53
	2	6	7	2	7	6	9	6	2	6	9	3	5	3	1		4		5		1		2				1	33	56
1	3	1	4	3	4	4	11	3	7	5	10	3	2	3	6		1		3		1		2		2		2	25	59
1	1	2	6	2	6	4	4	6	4	6	10	2	14	2	11	2	12	1	3	1	2		2		1		1	29	78
1		2	1	5	5	6	1	3	9	9	12	5	9	5	8	1	3	2	11		1		4		2		4	39	71
		2	5	2	5	7	9	3	5	10	8	4	9	3	6	3	3	1	8	1	6		9		2		4	36	80
	3	3	3		4	6	8		6	7	15	1	8	5	10	1	6	1	5	2	4	1	8		4	1	5	28	89
	1		6	3	3	1	7	1	6	5	11	5	10	1	11		8	1	4	1	3	1	6		2	1	3	21	81
					5	1	9	5	5	7	9	8	11	6	8	1	5		6		6	2	6		1		6	30	77
						3	5	1	5	4	17	1	6	1	13	2	3	1	11	2	2	2	4		2		4	17	72
				1	1	2	3	2	5	7	5	3	1		6	3	7	1	6	1	5	1	6		3	1	3	22	51
				1		2	4		8	3	8	1	7	1	5		5	3	8	1		1	4	1	1	1	5	15	55
				1			3	2	1		9	4	7		14	3	4	4	7	1	6	1	3	1	1	1	4	18	59
						1	3	1	3	3	9	2	7	4	2	2	3	3	9	1	5	2	2	1	1	1	6	21	50
							2		2	2	1	4	6	2	6	2	3	1		4	2	1	2	2	2	1	3	19	29
								1			2	4	1	3	9	3	1	2	3	2	4	2	3	1	3	1	2	19	28
									1	1	3	1	2	10	3	3	3	5	6	1	3	2	1	2	2	2	6	29	30
	1						1	3		2	1	2	1	4	2	5	2	6	4	1	1	1	1	1	2	1	6	26	22
										1	1	3	2	1	4	3	3	1	2	2	1	1	2	1	1	1	1	14	17
			1						1	1	2			4	1	2	2	1		1	3	1	4	1	1	1	2	12	17
						1			1	1		1		5	2	1	1	2		1		4	6	3	1	2	3	21	14
							2				1	3	1	6		1	2	1	2	2		2	3	2		2	1	19	12
											1	1					1	2		1		3	1	2	1	2	1	11	5
													2	1	1	2	2	2		2		2	1	2		1		12	6
									1			1		1		1		1		2		3	1	1			1	10	3
61 142	96 144	112 145	128 146	80 147	107 148	97 150	143 153	68 152	115 155	123 155	185 157	80 159	132 157	84 164	158 159	55 164	97 159	52 167	109 160	33 166	61 160	40 170	89 160	25 170	36 161	28 170	77 162		

In order to accommodate Table 1 to the size of the printed page, it has been necessary to take out the following measurements from that table:

At 106 centimeters—girls, one 6½ years old; at 108 centimeters—girls, one 6 years old, one 6½ years, and boys, one 6 years old; at 109 centimeters—girls, two 6 years old, and boys, one 6 years old, two 7 years; at 110 centimeters—girls, one 6 years old, five 6½ years, one 7 years, two 7½ years, and boys, two 6 years old, and two 6½ years; at 111 centimeters—girls, two 6 years old, two 6½ years, and boys, one 6 years old, two 7½ years; at 112 centimeters—girls, eleven 6 years old, one 7 years, one 8 years, and boys, three 6 years old, one 7 years; at 113 centimeters—girls, three 6 years old, one 6½ years, one 8 years, and boys, two 6 years old, two 6½ years, one 7 years, two 7½ years, two 8 years; at 114 centimeters—girls, six 6 years old, one 6½ years, three 7½ years, and boys, one 6 years old, two 6½ years, four 7 years, one 7½ years, one 8½ years; at 176 centimeters—girls, one 15½ years old, one 16 years, and boys, one 14 years old, one 15½ years, three 16 years, one 16½ years, two 17 years, one 17½ years, one 18 years; at 177 centimeters—girls, one 17 years old, one 17½ years, one 18 years, and boys, one 16 years old, one 16½ years, one 17 years, one 17½ years, one 18 years; at 178 centimeters—girls, one 14½ years old, and boys, one 15 years old, one 15½ years, one 16 years, two 17 years, two 18 years; at 179 centimeters—boys, one 14½ years old, one 15½ years, two 17 years, one 17½ years, two 18 years; at 180 centimeters—boys, one 15 years old, one 17½ years; at 181 centimeters—boys, one 15½ years old, one 18 years; at 182 centimeters—boys, one 14½ years old, one 16 years; at 183 centimeters—boys, one 14½ years old, one 16½ years; at 184 centimeters—boys, one 16 years old; at 186 centimeters—boys, one 14½ years old.

The extremes in growth to be noted are marked, in that the tallest boy at 15½ years of age is 49 centimeters taller than the shortest; the tallest girl at 13½ years of age is 39 centimeters taller than the shortest. The widest range of differences is during the adolescent age, where there is a slight tendency toward bimodal distribution (i. e., two groups of cases appear with central tendencies for each); this appears for boys at 13 and for girls at 12½. The boys are taller than the girls from 6 to 11 years of age; the girls then become taller and remain so until 14½, when the boys are taller. This is graphically shown by the solid and the leader lines drawn transversely in the charts. Those below these lines are tall individuals and those above are short individuals.

4. WEIGHT AND AGE DISTRIBUTION.

This distribution, like that of height, was taken for the University of Chicago schools and the Francis W. Parker School, in order to find a working norm. It is to be noted there is a much wider range of cases here than in the height distribution, and a more irregular surface of frequency for each age. The widest range of differences is found during the adolescent age, and in particular at the age of 15 years, where the heaviest boy weighs 110 pounds more than the lightest, and the heaviest girl 104 pounds more than the lightest. The boys are heavier than the girls from 6 to 12½ years of age; the girls then become heavier and remain so until 16, after which the boys again are heavier. The norms, like those of height, are above the averages derived by other investigators who have used but one measurement for each individual.

The table is self-explanatory and is uniform in construction with that of height.

The norms obtained in this table are, of course, least satisfactory for the lower and upper ages, where there are few cases. For several ages the same individual measurements occur, thus making the table approach what it would be if a homogeneous group were used for all ages from 6 to 18.

The weight table is uniform in construction with the height table, and the same individuals are used. Since the measurements here were taken in pounds, in place of kilograms, the distribution of pounds is retained for years and half years, and the kilogram equivalents are given for every 5 pounds, beginning with 35 pounds.

TABLE 2.—*Weight*

[Number of individuals—Boys, 460; girls, 638; total, 1,098.

Weight.		Age in years.																					
		6		6½		7		7½		8		8½		9		9½		10		10½		11	
		B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.
Pounds.	*Kilos.*																						
35	15.876	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
36	....	...	...	...	*1*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
37	....	...	*3*	...	...	...	*1*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
38	....	...	...	...	*1*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
39	....	1	*4*	...	*1*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
40	18.144	1	*1*	...	*1*	1	...	...	*1*	...	*1*	...	...	...	...	...	...	...	...	...	...	...	...
41	....	1	*1*	...	*1*	2	*1*	...	*1*	...	...	...	...	...	...	...	...	...	...	...	...	...	...
42	....	1	*5*	...	*1*	3	*2*	...	*1*	...	...	...	...	...	*1*	...	...	...	...	...	...	...	...
43	....	2	*4*	2	*1*	2	*4*	2	*1*	...	*1*	...	...	...	...	...	...	...	...	...	...	...	...
44	....	2	*4*	3	*4*	1	*7*	...	*4*	1	*1*	...	*1*	...	...	...	...	...	...	...	...	...	...
45	20.412	6	*3*	2	*2*	2	*4*	...	*3*	2	*2*	...	...	...	...	...	...	...	...	...	...	...	...
46	....	1	*2*	1	*2*	3	*3*	3	*3*	...	*4*	1	*3*	...	*2*	...	*1*	...	...	...	...	...	...
47	....	1	*3*	1	*3*	2	*2*	1	*6*	2	*2*	2	...	1	...	...	...	...	*2*	...	...	...	...
48	....	1	*1*	1	*4*	1	*3*	3	*4*	2	*7*	...	*2*	2	*1*	...	...	1	...	...	...	...	...
49	....	1	*4*	1	*2*	1	*1*	1	*2*	2	*5*	...	*2*	1	*1*	1	*4*	1	*2*	...	...	...	...
50	22.680	2	*1*	2	*3*	4	*4*	2	*3*	3	*5*	...	*5*	1	*2*	1	*3*	...	...	1	*1*	...	...
51	....	2	*1*	2	*2*	3	*2*	1	*5*	2	*9*	2	*4*	3	*5*	6	...	1	...	...	*1*	...	...
52	....	1	...	3	...	1	*4*	1	*4*	2	*6*	1	*5*	2	*6*	...	*3*	2	...	1	*2*	...	...
53	....	4	...	2	*3*	1	*4*	2	*2*	1	*3*	3	*5*	1	*2*	3	*5*	...	*1*	1	*3*	1	...
54	....	2	...	1	...	1	*3*	3	*1*	2	*2*	1	*2*	3	*2*	4	*4*	1	*4*	...	*1*	1	...
55	24.948	1	...	...	...	2	*2*	2	*3*	1	*4*	2	*2*	1	*6*	4	*11*	1	*5*	...	*2*	4	*2*
56	....	1	...	2	...	1	...	3	*1*	1	*3*	6	*4*	1	*5*	2	*4*	3	*1*	1	*1*	1	...
57	....	...	...	...	...	2	...	2	*2*	3	*5*	2	*4*	8	*6*	3	*4*	4	*1*	1	*5*	1	*4*
58	....	...	...	1	...	2	...	3	*1*	3	*2*	3	*2*	2	*8*	2	*5*	3	*1*	3	*2*	2	*3*
59	....	1	...	1	...	...	*1*	3	*1*	1	*2*	1	*3*	4	*5*	2	*8*	1	*4*	2	*4*	2	*5*
60	27.252	...	...	2	...	...	*1*	1	*1*	1	*2*	1	*4*	3	*2*	2	*3*	1	*2*	4	*6*	1	*4*
61	....	...	...	1	...	1	...	1	*1*	1	*1*	2	*1*	2	*4*	...	*4*	2	*7*	1	*4*	8	*2*
62	....	...	...	...	...	...	*1*	1	...	2	*1*	1	*3*	3	*4*	5	*3*	2	*4*	2	*1*	2	*5*
63	....	...	...	...	...	...	*1*	...	...	1	*2*	1	*1*	2	*3*	2	*2*	3	*1*	2	*3*	1	*5*
64	....	...	...	...	...	1	*1*	1	...	2	...	2	*2*	1	*9*	5	*3*	4	*6*	2	*2*	3	*9*
65	29.484	...	...	...	...	...	...	2	...	1	*2*	2	*1*	2	*1*	4	*4*	1	*1*	4	*2*	4	*9*
66	....	...	...	...	...	...	...	1	...	3	...	4	*2*	5	*3*	4	*3*	2	*5*	2	*2*	2	*5*
67	....	...	...	...	...	...	...	1	...	1	...	1	*1*	...	*1*	4	*3*	3	*1*	1	*1*	3	*3*
68	....	...	...	...	...	...	*1*	...	...	1	...	2	*1*	1	*1*	2	*3*	2	*6*	4	*5*	1	*4*
69	....	...	...	1	...	1	...	...	...	1	...	1	...	...	*1*	6	*2*	3	*2*	4	*2*	2	*3*
70	31.752	...	...	...	...	...	...	...	...	1	...	3	*1*	...	*2*	3	*2*	2	*2*	1	*4*	3	*3*
71	....	...	...	...	...	...	...	1	...	2	...	2	*3*	1	*1*	1	*6*	4	...	1	*2*	4	*3*
72	....	...	...	...	...	...	...	1	...	1	...	...	...	1	...	1	*1*	5	*4*	3	*1*	2	*4*
73	....	...	...	...	*1*	...	...	...	...	...	...	...	...	...	...	1	...	...	*1*	1	*1*	4	*4*
74	....	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	*1*	4	*2*	1	*5*	6	*2*
75	34.020	...	...	...	...	...	...	...	...	1	...	...	...	...	*1*	...	*1*	5	*2*	4	*2*	1	*2*
76	....	...	*1*	...	...	...	...	...	...	...	...	1	...	...	...	...	*1*	...	*1*	2	*2*	6	*3*
77	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	*2*	1	*2*	2	*3*
78	....	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	*2*	2	*1*	3	*1*
79	....	...	...	...	...	...	...	1	...	...	...	...	...	...	*2*	...	*3*	...	*1*	3	...	1	...
80	36.287	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*1*	1	*1*	2	*3*	2	*3*
81	....	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	*3*	1	...	1	*2*
82	....	...	...	...	...	...	...	...	...	...	...	...	...	...	*1*	...	...	1	...	2	*1*	3	*3*
83	....	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	*1*	1	...	2	*1*
84	....	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	2	...	...	*1*	2	*1*
85	38.562	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	*2*	...	*1*	...	*2*	2	*1*
86	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*1*	...	...	2	*1*
87	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	*2*
88	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*1*	...	...
89	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	*1*	1	...	1	...
90	40.823	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
91	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
92	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
93	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	*2*
94	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*1*
95	43.091	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*2*
96	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*1*	...	*1*
97	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*1*	...	...
98	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*1*
99	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*1*	...	...	...	...

and age distribution.

Number of measurements—Boys, 1,475; girls, 2,103; total, 3,565.]

Age in years.																														B.	G.
11½		12		12½		13		13½		14		14½		15		15½		16		16½		17		17½		18			
B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.		
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	5
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	10
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	11
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	21
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	14
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	20
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	18
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	22
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	23
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	27
...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	22	31
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14	30
...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	20	29
1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	20	20
...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18	39
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	22	19
1	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	28	33
...	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24	28
2	3	...	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21	40
...	1	1	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18	28
2	1	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21	28
2	6	4	4	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	27	32
3	1	1	3	2	3	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	20	27
8	5	...	1	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	29	41
2	4	1	3	2	1	...	...	1	...	1	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	27	30
...	3	6	2	1	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	30	28
3	5	2	4	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	21	20
1	2	2	2	4	5	1	3	1	...	...	2	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23	39
1	4	1	2	6	1	3	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	30	18
2	1	2	4	4	3	1	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	23	24
2	5	4	2	1	2	...	...	1	2	1	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	26	28
...	2	3	5	4	5	2	...	1	2	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	26	25
3	4	3	5	5	2	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21	19
1	1	6	4	1	1	2	1	3	2	2	3	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	28	23
3	1	4	2	1	3	1	4	3	1	1	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	24	22
3	1	8	1	1	2	1	2	3	1	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	27	15
1	2	6	3	3	3	4	3	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	22	18
1	2	4	1	2	4	2	1	3	3	2	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	22	17
2	4	2	3	3	4	4	4	3	1	2	1	3	1	1	...	...	1	2	...	...	...	...	...	...	...	...	...	27	25
3	4	2	3	4	3	3	1	1	1	1	1	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	21	22
1	1	5	1	1	1	3	3	3	...	2	1	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19	15
3	2	2	2	4	2	3	2	...	3	1	...	1	2	1	...	...	...	...	1	...	...	...	1	...	...	...	1	21	21
1	1	1	2	1	1	1	2	4	1	1	4	...	1	2	...	...	...	...	1	...	...	...	...	...	...	...	...	16	15
1	2	1	2	3	2	1	4	5	3	2	3	...	...	1	2	...	...	...	1	...	...	...	1	...	...	...	...	20	22
3	2	4	3	2	3	1	1	3	2	4	3	...	2	1	3	...	...	...	...	...	...	...	...	...	...	...	...	21	25
2	1	2	4	2	2	4	2	...	1	2	3	...	1	2	2	...	1	1	...	...	...	...	...	...	...	...	...	17	19
...	3	6	2	4	1	2	3	4	2	3	2	3	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	26	16
...	4	3	2	2	6	6	1	2	2	6	2	...	2	1	1	...	1	1	...	...	2	...	1	...	1	...	1	21	27
1	1	2	2	1	5	1	2	1	1	1	2	1	2	2	1	1	2	1	...	...	...	...	...	...	...	...	...	15	19
1	2	...	2	1	2	3	2	4	2	4	8	2	2	...	2	...	...	...	1	...	...	...	1	1	...	...	...	18	24
...	1	2	2	1	1	2	2	1	2	3	2	2	2	2	4	...	...	...	1	...	...	...	...	...	...	...	...	13	17
...	2	...	2	2	1	2	1	1	2	4	4	1	1	1	3	2	...	...	...	...	...	...	1	...	1	...	...	13	18
...	2	2	1	1	2	1	4	4	2	3	1	2	1	1	4	...	...	...	...	...	...	...	...	...	1	...	...	15	20
...	1	1	...	...	1	1	2	1	2	2	1	1	2	2	2	1	2	...	2	1	...	...	2	...	...	...	...	10	18
...	4	1	1	...	2	2	2	1	1	3	2	1	1	1	4	...	1	1	...	...	...	...	1	...	1	...	...	11	22
...	...	2	1	3	1	3	5	1	4	4	3	2	3	1	1	1	4	1	4	...	2	1	1	...	...	...	...	19	31
...	...	1	...	1	2	...	2	1	1	2	8	1	4	1	1	1	...	1	2	1	1	...	1	...	...	...	1	10	24
...	1	1	...	...	2	1	2	3	1	1	2	1	1	1	3	1	...	1	...	1	...	...	2	...	...	...	...	11	15
2	1	...	1	2	1	1	4	1	2	6	3	3	4	2	2	1	2	1	1	...	...	1	...	...	2	...	...	20	24

TABLE 2.—*Weight and age*

Weight.		Age in years.																					
		6		6½		7		7½		8		8½		9		9½		10		10½		11	
		B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.
Pounds.	*Kilos.*																						
100	45.359	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*1*	...	...	...	...
101	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
102	....	...	...	...	...	...	...	...	...	...	...	...	...	...	*1*	...	...	...	...	...	...	...	...
103	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
104	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
105	47.627	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
106	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
107	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
108	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
109	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
110	49.895	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
111	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
112	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
113	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
114	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
115	52.167	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
116	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
117	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
118	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*1*	...	...
119	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
120	54.431	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
121	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
122	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
123	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
124	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
125	56.699	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
126	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
127	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
128	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
129	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
130	58.967	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
131	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
132	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
133	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
134	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*1*	...	...
135	60.235	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
136	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Number of cases..	....	32	*38*	29	*33*	38	*53*	44	*51*	47	*72*	50	*64*	54	*89*	71	*100*	71	*85*	63	*82*	90	*109*
Median weight...	....	47	*44*	51	*47*	50	*48*	56	*49*	57	*51*	60	*56*	59	*58*	63	*59*	67	*65*	69	*66*	71	*67*

distribution—Continued.

Age in years.																													
11½		12		12½		13		13½		14		14½		15		15½		16		16½		17		17½		18		B.	G.
B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.		
...	1	...	1	...	2	1	4	...	2	3	4	2	2	2	1	1	2	1	3	...	...	1	1	...	...	...	2	11	26
...	...	...	...	...	...	2	7	...	2	2	7	2	2	1	1	1	3	...	2	...	...	...	...	...	1	...	1	8	26
...	...	2	...	1	3	1	1	...	4	4	4	3	1	2	6	1	4	2	2	1	1	...	2	...	...	...	...	17	28
...	...	1	1	...	1	...	...	...	1	2	6	6	2	1	3	3	4	3	3	1	4	...	...	...	...	1	1	18	26
...	...	...	2	...	1	2	2	...	3	1	4	2	3	2	2	1	1	2	6	1	2	1	...	...	...	...	2	12	27
...	...	...	...	...	...	1	...	...	1	6	5	2	4	3	2	1	1	1	4	2	3	...	2	...	...	...	...	16	22
...	1	...	...	1	...	...	3	1	3	2	2	1	2	2	4	2	6	1	4	1	2	...	...	...	...	...	1	11	27
...	...	...	...	...	...	...	...	1	3	...	2	2	...	3	3	1	1	1	6	1	2	1	2	...	1	...	2	10	21
...	1	...	1	...	1	1	...	1	...	5	2	2	1	3	3	1	1	2	3	1	2	1	2	...	...	...	1	17	18
...	...	...	...	...	...	...	5	1	1	2	2	1	5	1	2	1	2	1	2	2	1	...	...	...	...	...	1	10	21
...	...	...	...	...	1	...	5	...	...	2	5	4	...	4	3	1	7	1	1	...	6	...	2	...	2	...	5	12	37
...	...	...	...	...	...	...	2	...	1	1	6	1	2	4	3	1	3	1	3	1	...	1	3	...	...	...	1	10	24
...	...	...	...	...	...	1	1	1	1	1	6	1	...	1	5	1	6	2	2	...	1	...	2	...	...	1	5	9	29
...	...	...	...	...	...	1	2	2	...	...	3	1	1	2	7	1	1	2	1	...	1	1	3	2	1	...	1	12	21
...	...	...	...	...	...	2	1	1	...	1	1	1	...	1	5	4	1	1	3	1	2	...	2	...	2	1	2	13	19
...	...	...	...	...	1	...	3	...	1	...	1	...	1	4	5	1	...	...	2	1	2	1	3	...	1	1	3	8	23
...	...	...	2	...	...	...	...	1	1	3	4	...	5	2	8	...	1	...	2	...	...	1	1	...	2	1	3	8	29
...	...	1	1	...	1	1	1	1	...	1	3	...	1	...	5	...	7	8	3	...	4	1	...	...	1	1	1	10	28
...	...	...	...	...	...	...	1	1	...	...	4	1	2	1	1	...	...	...	2	...	1	...	4	...	2	1	2	4	20
...	...	...	...	...	1	...	3	1	1	...	2	...	2	...	2	...	2	2	1	...	1	...	...	1	1	...	3	4	19
...	...	...	1	...	...	...	1	...	4	...	4	1	1	1	4	...	1	...	...	1	3	...	2	...	2	...	1	3	24
...	...	...	...	...	1	...	...	...	...	...	...	1	2	4	1	...	2	1	1	...	1	...	...	1	1	...	2	7	11
...	...	...	...	...	...	...	...	1	...	...	2	...	2	...	1	...	1	...	1	2	...	1	4	...	1	...	1	4	13
...	...	...	...	...	...	...	3	...	...	1	2	...	1	1	5	2	1	1	2	2	1	...	2	1	1	...	1	8	19
...	...	...	...	...	...	1	1	...	1	2	1	1	2	1	2	...	1	...	1	...	1	1	2	...	1	1	2	7	15
...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	2	1	4	4	3	2	...	3	...	...	2	...	3	10	17
...	...	...	...	...	1	1	...	...	1	2	1	2	2	...	...	1	1	1	1	...	...	...	1	2	...	1	...	10	8
...	...	...	...	...	...	...	...	1	...	2	5	...	...	...	3	1	1	2	...	...	...	...	1	...	...	...	1	6	11
...	...	...	...	...	...	...	...	...	...	...	1	2	1	1	2	...	3	1	1	3	1	3	1	...	...	...	...	10	10
...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	2	1	1	1	...	...	...	1	1	1	1	...	...	5	6
...	...	...	...	...	...	...	1	...	...	...	1	...	3	2	2	1	1	...	2	...	...	1	1	1	...	...	3	5	14
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	...	2	2	...	...	...	1	1	4	6
...	...	...	1	...	1	...	...	...	...	...	...	1	...	1	2	...	...	...	1	...	1	1	1	...	...	...	2	3	9
...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	1	3	...	1	1	1	...	...	...	...	...	...	...	6	3
...	...	...	1	...	...	...	...	...	...	...	1	...	...	1	1	...	...	1	1	1	...	1	...	...	...	...	2	4	7
...	...	...	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	1	1	...	1	...	1	...	...	3	4
...	...	...	...	...	...	1	1	3	...	2	5	6	5	7	8	3	12	6	11	3	8	3	3	7	3	9	5	50	61
62	106	108	104	82	98	87	126	79	78	116	100	75	99	83	148	45	97	57	98	33	69	28	61	17	33	19	64	....	...
73	75	77	75	78	83	86	95	87	95	96	103	103	104	108	112	109	111	112	109	115	113	125	113	128	117	131	116	....	...

5. MEDIANS OF HEIGHT AND WEIGHT.

This table represents the median heights and median weights for boys and girls, for six-month intervals from 6 to 18 years of age, as derived from a study of the distribution of the two schools.

TABLE 3.—*Medians of height and weight.*

Age.	Median height.				Number of cases.		Median weight.				Number of cases.	
	Boys.		Girls.		Boys.	Girls.	Boys.		Girls.		Boys.	Girls.
	Centimeters.	*Inches.*	*Centimeters.*	*Inches.*			*Kilograms.*	*Pounds.*	*Kilograms.*	*Pounds.*		
6	116	45.7	114	45.1	28	41	21.3	47.0	19.6	43.6	32	38
6½	119	46.9	117	46.2	29	50	23.1	51.0	21.2	46.8	29	33
7	121	47.5	121	47.6	43	58	22.5	49.6	21.8	48.2	38	53
7½	125	49.2	123	48.4	47	54	25.5	56.2	22.2	49.0	43	51
8	128	50.3	125	49.2	52	87	25.9	57.2	23.2	51.3	47	72
8½	131	51.5	126	49.7	48	71	27.2	60.0	25.2	55.6	50	64
9	131	51.6	130	51.1	66	89	26.6	58.6	26.4	58.1	54	88
9½	134	52.7	131	51.5	78	101	28.4	62.5	26.9	59.3	71	100
10	136	53.5	135	53.0	78	93	30.5	67.2	29.7	65.5	71	83
10½	139	54.7	137	54.2	76	85	31.2	68.8	29.8	65.8	63	82
11	139	54.7	141	51.1	103	110	32.3	71.1	30.2	66.8	90	109
11½	142	55.9	144	56.6	61	96	33.0	72.7	32.9	72.5	62	106
12	145	57.1	146	57.4	112	128	34.8	76.8	34.2	75.3	103	104
12½	147	57.9	148	58.1	80	107	35.2	77.8	37.7	83.0	82	98
13	150	59.0	153	60.2	97	143	39.0	86.0	43.0	94.8	87	125
13½	152	59.8	155	60.9	68	115	39.5	87.0	43.1	95.0	79	78
14	155	60.9	157	61.8	123	185	43.6	96.1	46.5	102.6	116	165
14½	159	62.6	157	62.0	80	132	46.4	102.5	47.0	103.5	75	99
15	164	64.5	159	62.6	84	158	48.2	107.5	50.8	112.0	82	142
15½	164	64.7	159	62.6	55	97	49.1	108.5	50.2	111.2	75	97
16	167	65.7	160	62.9	52	109	50.8	112.0	49.4	108.8	57	98
16½	166	65.5	160	63.0	33	61	51.7	114.5	51.0	112.5	33	59
17	170	66.5	160	62.9	41	89	56.6	124.7	51.4	113.2	28	61
17½	170	66.5	161	63.4	25	36	58.2	128.5	52.8	116.5	17	33
18	170	66.5	162	63.8	28	77	59.1	130.5	51.4	115.7	19	64
	Total number of cases............				1,587	2,872	....	....	....	....	1,464	2,101
	Total number individuals........				501	706	....	....	....	....	460	638

6. INDIVIDUAL INCREMENTS IN HEIGHT, WEIGHT, AND LUNG CAPACITY.

The writer has aimed, as far as space will permit, to give the original data with results in such form that further comparisons and correlations may be worked out. Tables 4, 5, and 13–22 give the initial measurements in height, weight, and lung capacity, with the yearly increments and per cents of gain and loss for 50 boys and 50 girls from 7 to 13 years of age, and for 50 boys and 50 girls from 12 to 17 years of age. The individuals are arranged in an ascending scale in accordance with the initial height at 7 and 12 years of age. Many individuals with the longest series of measurements have been omitted on account of the records having been made before or after the interims included in these tables. All the individuals with long records, however, are represented in the charts of individual curves which follow the tables. The individuals represented in both tables may be found by means of the cross references given in the explanation of the curve charts.

In the tables the serial numerals at the left refer to the respective individuals. The heights are in centimeters, the weights in pounds, the lung capacities in cubic inches; the respective increments are of the same units of measurement. The per cent of gain is the proportion of the increment to the previous measurement. The averages and average deviations of increments and the averages of the per cents in the middle of the table are for the first 25 shorter individuals and those at the bottom of the table are for the 25 taller individuals. The average height, weight, and lung capacity for each year and half year at the bottom of the tables are for the 50 in each group and offer a means of comparison between the medians or norms found in the distribution tables where there were more individuals, but fewer repeated measurements. No measurements here, as indicated in the discussion on the method of procedure, can be more than three months from the exact chronological age.

These tables are given in order that the individual differences may be closely noted, that the differences between gain in absolute increment and gain in per cent may be compared, and that these data may be accessible for future comparisons in this study and for those who wish to make further correlations.

The boys and girls are from the three schools and represent a fairly normal distribution, except that the Francis W. Parker boys are slightly inferior to the others in height and the Francis W. Parker girls, who were measured more frequently than those of the other schools, show more individual fluctuations.

HEIGHT.

From the years 6 to 13½, the yearly increment varies from 1 to 8 or 9½ centimeters. At the age of 12 there is a surprising jump in the increase, which reaches as high as 12 centimeters; the rapid increase continues up to 17 years of age. The increase from 6 to about 7½ has no uniformity, and seems to depend on the individual. From the years 8 to 12 the usual increase is from 7 to 9 centimeters. Here, too, is the greatest uniformity of increase, that is more boys increase the same number of centimeters than at any other time. In some sporadic cases the increment is as much as 10 centimeters. From 13 to 17 the increment is larger.

WEIGHT.

From the years 6 to 7½ there is little uniformity in weight increment, for it varies all the way from 2 to 15 kilograms. At 7½ the increase begins to be a little more uniform, and a rough average can be taken. This is about 4 kilograms. In two cases there was a loss, of 2 and of 5 kilograms, respectively; but loss is rare. The average stays almost the same up to 13 years. But some individuals increased from 14 to 22 kilograms. These cases, were, however, sporadic. The greatest uniformity occurs from 9½ to 10½ and again from 14 to 15½. The least uniformity of increase is from 12 to 13. The average increment in the ages between 11 and 17 is from 6 to 10 kilograms. The greatest increase, 18 to 23 kilograms, is found to occur between the ages of 12 and 16½. In one case between 16 and 17 the increase was remarkable, 35 kilograms. There were four cases of loss varying from 1 to 4 kilograms. The increase from 11 to 17 is so irregular as to make it almost impossible to strike an average.

LUNG CAPACITY.

As a rule, the greatest relative gains in breathing capacity occur between the first and the second measurement, which is probably due to the fact that the child has not learned how to use the spirometer, which involves a voluntary reaction as well as a physical measurement. The cases where children lose in breathing capacity are, as a rule, near the first measurements or are caused by colds at the time of measurement.

There is less uniformity in lung capacity than there is in weight. For example, between the ages of 7½ and 8½ the increment varies from a loss of 16 cubic centimeters to an increase of 49. Before the age of 7½ there is absolutely no uniformity; after this the average may be roughly estimated at 8 to 16 cubic centimeters increase. In the ages from 10 to 13 there is a great fluctuation; all the way from 2 to 22 cubic centimeters, and 2 cases of loss. Uniformity is almost lost from 11 to 17. The ages of greatest uniformity are from 13 to 15.

To give a few examples of the extreme fluctuation, and to give an idea of the difficulty in striking even a rough average, the following cases may be cited: From 11 to 12 years of age the lung capacity varies from a loss of 2 to a gain of 46 cubic centimeters; from 13 to 14 it varies from a loss of 16 to a gain of 56 cubic centimeters; from 14 to 15, from a gain of 2 to a gain of 66 cubic centimeters; from 16 to 17, from a loss of 2 to a gain of 56 cubic centimeters.

It is to be noted in reading these tables that the initial height, weight, and lung capacity are given in the first column after the individual's number. The yearly increment or gain in growth is given just after the initial measurement and the gain per cent just after the increment. For example, number 1 was 112 centimeters tall at 7 years of age and 116.8 centimeters at 8 years of age. This girl grew 4.8 centimeters, or 4.3 per cent, during the year. At 9 years of age this girl was 119.6 centimeters tall, and she had, therefore, gained 2.8 centimeters, or 2.4 per cent.

TABLE 4.—*Increments of growth in height for a group of 50*

No.	7 years.			7½ years.			8 years.			8½ years.			9 years.			9½ years.			10 years.		
	Height.	Increment, 6-7 years.	Per cent gain.	Height.	Increment, 6½–7½ years.	Per cent gain.	Height.	Increment, 7–8 years.	Per cent gain.	Height.	Increment, 7½–8½ years.	Per cent gain.	Height.	Increment, 8–9 years.	Per cent gain.	Height.	Increment, 8½–9½ years.	Per cent gain.	Height.	Increment, 9–10 years.	Per cent gain.
	Cm.	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*	
1	112.0						116.8	4.8	4.3				119.6	2.8	2.4	121.3			124.6	5.0	4.1
2	112.8						118.8	6.0	5.3				123.6	4.8	4.0				129.6	6.0	4.9
3	113.0						118.6	5.6	5.0				123.2	4.6	3.9				126.0	2.8	2.2
4				113.1						119.0	5.9	5.2	122.6						127.2	4.6	3.7
5				113.7									119.8			123.4					
6	114.3	4.9	4.5	116.6	5.6	5.1				121.9	5.3	4.5	123.3			125.6	3.7	3.1			
7				114.8						119.6	4.8	4.2				122.4	2.8	2.3			
8				116.0						121.0	5.0	4.3				126.6	5.6	4.6			
9				117.2						123.4	6.2	5.2				129.0	5.6	4.5			
10	116.0						120.0	4.0	3.4				125.2	5.2	4.3				130.0	4.8	3.8
11				120.0						125.6	5.6	4.7				131.0	5.4	4.3			
12	117.4			123.0	6.2	5.6				128.0	5.0	4.1				131.8	3.8	2.9			
13				117.7			120.2			122.1	4.4	3.7	126.0	5.8	4.8	128.0	5.9	4.9			
14	117.9			122.1			123.6	5.7	4.8				129.3	5.7	4.6						
15				118.4	4.1	3.6	121.2			123.6	5.2	4.4	126.5	5.3	4.4	128.6	5.0	4.1	133.2	6.7	5.3
16	118.4	6.4	5.7				125.6	7.2	6.1				129.8	4.2	3.3				136.0	6.2	4.8
17	118.6						122.6	4.0	3.3				128.4	5.8	4.7				134.4	6.0	4.7
18				118.8	6.6	5.9				124.4	5.6	4.7				129.0	4.6	3.7			
19	119.0			122.5									128.9			130.7			133.9	5.0	3.9
20	119.2									124.4						129.6	5.2	4.1			
21	119.4						125.0	5.6	4.7	125.9						130.7	4.6	3.6	133.9		
22				119.6			122.2						127.0	4.8	3.9				131.4	4.4	3.5
23				119.6	4.6	4.0				122.6	3.0	2.5				126.4	3.8	3.1	129.8		
24				120.0			123.6						127.8	4.2	3.5				131.6	3.8	3.0
25	121.0	6.0	5.2				124.4	3.4	2.8				129.4	5.0	4.0				133.8	4.4	3.4
Av.		5.8	5.1		5.4	4.8		5.1	4.4		5.1	4.6		4.9	3.9		4.7	3.8		5.0	3.9
Av. var.		.6			.9			1.0			.6			.6			.7			.8	
26	116.2	5.8	5.3				122.4	6.2	5.3				127.0	4.6	3.8				133.0	6.0	4.7
27				118.3			120.3			123.9	5.6	4.7	126.7	6.4	5.3	129.2	5.3	4.3			
28	120.5			123.5			126.3	5.8	4.8				128.9	2.6	2.1	131.4			134.2	5.3	4.1
29				121.0						125.2	4.2	3.5				129.8	4.6	3.7	134.8		
30	121.0						126.4	5.4	4.5				130.4	4.0	3.2				136.6	6.2	4.7
31				122.6	5.4	4.6				128.2	5.6	4.6				134.4	6.2	4.8			
32	122.2						125.4	3.2	2.6				127.7	2.3	1.8	130.7					
33				122.2	4.2	3.6				126.4	4.2	3.4				132.4	6.0	4.7			
34	123.4						130.0	6.6	5.3	133.8						138.0	4.2	3.1			
35				123.6			128.6						134.0	5.4	4.2				139.0	5.0	3.7
36				123.4	3.5	2.9	125.6			128.4	5.0	4.1				136.1	7.7	6.0	137.9		
37				124.6			128.6						134.6	6.0	4.7				140.4	5.8	4.3
38				124.6	6.2	5.2				130.6	6.0	4.8				135.4	4.8	3.7			
39				124.8						130.0	5.2	4.2				137.2	7.2	5.5			
40	125.0	6.0	5.0				129.6	4.6	3.7				135.0	5.4	4.2				139.2	4.2	3.1
41	127.5			129.3						136.5	7.2	5.6	138.3	5.5	4.1				141.6	3.3	2.4
42				127.0						133.6	6.6	5.2				140.0	6.4	4.8			
43				131.0			133.2	6.2	4.9				136.5	3.3	2.5				139.7	3.2	2.3
44				127.0			129.1			132.2	5.2	4.1	137.0	7.9	6.1				142.3	5.3	4.1
45				127.2	5.0	4.1				133.6	6.4	5.0				138.6	5.0	3.7			
46				128.4	5.0	4.1				132.8	4.4	3.4				138.4	5.6	4.2			
47				128.0						133.6	5.6	4.4				138.8	5.2	3.9			
48				128.5	4.7	3.8	132.0			134.6	6.1	4.7	137.2	5.2	3.9	139.3	4.7	3.5			
49	129.8						136.4	6.6	5.1				142.8	6.4	4.7				149.6	6.8	4.8
50	135.9			137.1	4.3	3.2	141.9	6.0	4.4	146.2	9.1	6.6	148.7	6.8	4.8	152.7	6.5	4.4	156.1	7.4	5.0
Av.	120	5.9	5.2	122.6	4.8	3.9	125.4	5.6	4.5	128.0	5.8	4.6	129.8	5.1	4.0	132.1	5.7	4.3	135.5	5.3	3.9
Av. var.		.1			.6			.8			.9			1.3			.9			1.0	

girls from 7 to 13 years of age with consecutive measurements.

10½ years.			11 years.			11½ years.			12 years.			12½ years.			13 years.			
Height.	Increment, 9½–10½ years.	Per cent gain.	Height.	Increment, 10–11 years.	Per cent gain.	Height.	Increment, 10½–11½ years.	Per cent gain.	Height.	Increment, 11–12 years.	Per cent gain.	Height.	Increment, 11½–12½ years.	Per cent gain.	Height.	Increment, 12–13 years.	Per cent gain.	No.
Cm.	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		
126.3	5.0	4.1	......	....	....	130.7	4.4	3.5	135.2	....	....	137.4	6.7	5.1	142.5	7.3	5.4	1.
......	....	....	134.0	4.4	3.4	......	....	....	142.6	8.6	6.4	......	....	....	148.2	5.6	3.9	2.
......	....	....	130.6	4.6	3.7	......	....	....	136.6	6.0	4.6	......	....	....	142.0	5.4	4.0	3.
......	....	....	130.7	3.5	2.8	......	....	....	134.6	3.9	3.0	......	....	....	140.6	6.0	4.5	4.
128.0	4.6	3.7	......	....	....	133.0	5.0	3.9	......	....	....	138.4	5.4	4.1	......	....	....	5.
129.0	3.4	2.7	......	....	....	......	....	....	139.5	....	....	......	....	....	143.4	3.9	2.8	6.
126.0	3.6	2.9	......	....	....	130.6	4.6	3.7	......	....	....	......	....	....	......	....	....	7.
132.4	5.8	4.6	......	....	....	142.0	9.6	7.2	......	....	....	147.4	5.4	3.8	......	....	....	8.
134.6	5.6	4.3	......	....	....	138.6	4.0	3.0	......	....	....	143.6	5.0	3.6	......	....	....	9.
......	....	....	135.8	5.8	4.5	......	....	....	140.8	5.0	3.7	......	....	....	148.1	7.3	5.2	10.
135.8	4.8	3.7	......	....	....	140.0	4.2	3.1	......	....	....	144.2	4.2	3.0	......	....	....	11.
......	....	....	......	....	....	141.6	....	....	......	....	....	......	....	....	......	....	....	12.
132.7	4.7	3.7	134.6	....	....	136.0	3.3	2.5	140.3	5.7	4.2	143.4	7.4	5.4	148.6	8.3	5.9	13.
134.0	....	....	138.8	....	....	......	....	....	143.2	4.4	3.2	......	....	....	151.2	8.0	5.6	14.
......	....	....	137.4	4.2	3.2	139.7	....	....	143.0	5.6	4.1	146.9	7.2	5.2	152.4	9.4	6.6	15.
......	....	....	141.4	6.4	4.7	......	....	....	147.0	5.6	4.0	......	....	....	153.6	6.6	4.5	16.
......	....	....	139.0	4.6	3.4	......	....	....	145.4	6.4	4.6	......	....	....	......	....	....	17.
133.6	4.6	3.6	......	....	....	139.6	6.0	4.5	......	....	....	145.0	5.4	3.9	......	....	....	18.
136.5	5.8	4.4	138.0	4.1	3.1	......	....	....	144.1	6.1	4.4	151.0	....	....	152.4	8.3	5.8	19.
136.6	7.0	5.4	144.0	....	....	......	....	....	151.2	7.2	5.0	......	....	....	154.4	3.2	2.1	20.
136.5	5.8	4.4	138.9	5.0	3.7	140.9	4.4	3.2	147.5	8.6	6.2	149.8	8.9	6.3	......	....	....	21.
......	....	....	135.4	4.0	3.0	......	....	....	141.6	6.2	4.6	......	....	....	148.8	7.2	5.1	22.
......	....	....	137.0	7.2	5.5	......	....	....	143.5	6.5	4.8	......	....	....	150.2	6.7	4.1	23.
......	....	....	136.6	5.0	3.8	......	....	....	142.0	5.4	4.0	......	....	....	148.0	6.0	4.2	24.
......	....	....	138.8	5.0	3.7	141.6	....	....	144.6	5.8	4.2	......	....	....	150.4	5.8	4.0	25.
......	5.1	4.0	......	5.0	3.7	......	5.1	3.9	......	6.1	4.4	......	6.2	4.5	......	6.6	4.6	Av.
......	.8	....	......	.8	....	......	1.2	....	......	.9	....	......	1.2	....	......	1.2	....	Av. var.
......	....	....	138.8	5.8	4.4	......	....	....	147.2	8.4	6.1	......	....	....	153.2	6.0	4.1	26.
134.2	5.0	3.9	136.2	....	....	......	....	....	......	....	....	142.3	....	....	144.4	....	....	27.
137.0	5.6	4.3	138.4	4.2	3.1	......	....	....	147.3	8.9	6.4	151.7	....	....	154.9	6.6	4.5	28.
......	....	....	142.0	7.2	5.3	......	....	....	148.8	6.8	4.9	......	....	....	157.0	8.2	5.5	29.
......	....	....	140.8	4.2	3.1	......	....	....	147.0	6.2	4.4	151.6	....	....	......	....	....	30.
139.0	4.6	3.4	......	....	....	145.0	6.0	4.3	......	....	....	149.1	4.1	2.8	......	....	....	31.
139.7	9.0	6.9	141.5	....	....	......	....	....	151.3	9.8	6.9	151.7	....	....	......	....	....	32.
138.0	5.6	4.3	......	....	....	143.8	5.8	4.2	......	....	....	152.0	7.2	5.0	......	....	....	33.
141.2	3.2	2.3	......	....	....	146.2	5.0	3.5	157.2	7.9	5.3	152.4	6.2	4.2	......	....	....	34.
......	....	....	143.0	4.0	2.9	......	....	....	147.7	4.7	3.3	......	....	....	151.2	3.5	2.4	35.
......	....	....	143.5	5.6	4.1	146.1	....	....	......	....	....	153.0	6.9	4.7	155.5	....	....	36.
......	....	....	145.0	4.6	3.3	......	....	....	150.6	5.6	3.9	......	....	....	155.2	4.6	3.1	37.
141.4	6.0	4.4	......	....	....	148.4	7.0	4.9	......	....	....	158.0	9.6	6.5	......	....	....	38.
143.8	6.6	4.8	......	....	....	......	....	....	......	....	....	154.8	....	....	......	....	....	39.
......	....	....	144.8	5.6	4.0	......	....	....	148.4	3.6	2.5	......	....	....	154.6	6.2	4.2	40.
145.3	....	....	149.3	7.7	5.4	153.0	7.7	5.3	156.0	6.7	4.5	......	....	....	162.8	6.3	4.3	41.
145.6	5.6	4.0	......	....	....	152.0	6.4	4.4	......	....	....	158.4	6.4	4.2	......	....	....	42.
......	....	....	144.6	4.9	3.5	......	....	....	151.0	6.4	4.4	152.7	....	....	......	....	....	43.
......	....	....	149.3	7.0	4.9	153.9	....	....	......	....	....	159.5	5.6	3.6	......	....	....	44.
144.4	5.8	4.2	......	....	....	150.4	6.0	4.2	......	....	....	155.9	5.5	3.7	......	....	....	45.
144.2	5.8	4.2	......	....	....	151.6	7.4	5.1	......	....	....	156.4	4.8	3.2	......	....	....	46.
146.2	7.4	5.3	......	....	....	153.8	7.6	5.2	......	....	....	161.0	7.2	4.7	......	....	....	47.
143.4	4.1	2.9	146.6	....	....	148.5	5.1	3.6	151.7	5.1	3.5	161.2	12.7	8.6	......	....	....	48.
......	....	....	154.4	4.8	3.2	......	....	....	160.2	5.8	3.8	......	....	....	167.0	6.8	4.2	49.
......	....	....	......	....	....	168.1	....	....	170.4	....	....	......	....	....	......	....	....	50.
137.3	5.7	4.2	140.3	5.5	3.9	144.6	6.4	4.5	146.8	6.6	4.6	150.7	6.9	4.7	151.1	6.1	4.0	Av.
......	1.0	....	......	1.0	....	......	.8	....	......	1.4	....	......	1.6	....	......	1.0	....	Av. var.

TABLE 5.—*Increments of growth in height for a group of*

No.	12 years.			12½ years.			13 years.			13½ years.			14 years.			14½ years.		
	Height.	Increment, 11–12 years.	Per cent gain.	Height.	Increment, 11½–12½ years.	Per cent gain.	Height.	Increment, 12–13 years.	Per cent gain.	Height.	Increment, 12½–13½ years.	Per cent gain.	Height.	Increment, 13–14 years.	Per cent gain.	Height.	Increment, 13–14 years.	Per cent gain.
	Cm.	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*	
51	128.0	....	....	134.0	....	....	......	....	....	139.4	5.4	4.0	......	....	....	145.2	5.8	4.2
52	132.8	5.2	4.1	......	....	....	140.8	8.0	6.0	......	....	....	144.4	3.6	2.6	......	....	....
53	......	....	....	134.6	....	....	......	....	....	139.8	5.2	3.9	......	....	....	149.0	9.2	6.6
54	......	....	....	134.4	2.4	1.8	137.0	....	....	......	....	....	144.0	7.0	5.1	......	....	....
55	......	....	....	136.0	3.0	2.3	139.0	....	....	......	....	....	144.2	5.2	3.8	......	....	....
56	137.2	3.0	2.2	140.2	....	....	......	....	....	146.4	6.2	4.4	......	....	....	152.2	5.8	3.9
57	137.8	3.8	2.8	144.0	8.5	6.3	146.9	9.1	6.6	......	....	....	147.9	1.0	.7	153.0	....	....
58	......	....	....	138.2	6.4	4.9	......	....	....	145.6	7.4	5.4	......	....	....	150.4	4.8	3.3
59	138.6	7.6	5.8	......	....	....	144.8	6.2	4.5	......	....	....	148.4	3.6	2.5	......	....	....
60	138.8	6.6	4.9	......	....	....	143.8	5.0	3.6	149.0	....	....	......	....	....	153.6	4.6	3.2
61	139.0	4.2	3.1	......	....	....	143.0	4.0	2.9	......	....	....	148.0	5.0	3.5	......	....	....
62	139.4	6.0	4.5	140.8	5.0	3.7	......	....	....	147.3	6.5	4.6	151.8	....	....	......	....	....
63	139.7	....	....	......	....	....	143.4	3.7	2.6	147.3	....	....	148.5	5.1	3.6	152.1	4.8	3.3
64	140.3	8.3	6.3	......	....	....	146.0	5.7	4.1	149.8	....	....	151.2	5.2	3.6	155.0	5.2	3.5
65	......	....	....	141.0	5.6	4.1	145.4	....	....	......	....	....	152.0	6.6	4.5	......	....	....
66	141.4	5.7	4.2	......	....	....	149.2	7.8	5.5	154.3	....	....	157.7	8.5	5.7	158.7	4.4	2.8
67	142.0	9.0	6.8	144.9	....	....	......	....	....	147.6	2.7	1.9	148.0	....	....	......	....	....
68	143.2	4.4	3.2	146.8	....	....	......	....	....	153.4	6.6	4.5	......	....	....	160.0	6.6	4.3
69	143.2	....	....	......	....	....	......	....	....	151.8	....	....	......	....	....	157.6	5.8	3.8
70	......	....	....	143.4	5.4	3.9	......	....	....	150.4	7.0	4.9	......	....	....	154.6	4.2	2.8
71	144.4	....	....	......	....	....	149.2	4.8	3.3	......	....	....	151.1	1.9	1.3	......	....	....
72	145.4	4.2	3.0	......	....	....	150.8	5.4	3.7	......	....	....	155.8	5.0	3.3	......	....	....
73	145.8	6.2	4.4	......	....	....	148.4	2.6	1.8	......	....	....	150.6	2.2	1.5	......	....	....
74	......	....	....	147.0	4.8	3.4	......	....	....	149.0	2.0	1.4	......	....	....	151.0	2.0	1.3
75	147.6	9.6	7.0	......	....	....	153.6	6.0	4.1	......	....	....	156.4	2.8	1.8	......	....	....
Av	......	6.0	4.5	......	5.1	3.8	......	5.7	4.1	......	5.4	3.9	......	4.5	3.1	......	5.3	3.6
Av. var	......	1.6	....	......	1.3	....	......	1.4	....	......	1.4	....	......	1.5	....	......	1.2	....
76	143.0	....	....	......	....	....	151.4	8.4	5.9	......	....	....	159.4	8.0	5.3	......	....	....
77	145.4	3.8	2.7	......	....	....	152.0	6.6	4.5	......	....	....	157.4	5.4	3.6	......	....	....
78	146.2	7.4	5.3	......	....	....	153.6	7.4	5.1	158.6	....	....	......	....	....	165.1	6.5	4.1
79	......	....	....	146.6	6.2	4.4	......	....	....	153.4	6.8	4.6	......	....	....	160.1	6.7	4.3
80	......	....	....	146.5	8.0	5.8	......	....	....	148.3	1.8	1.2	152.0	....	....	154.4	6.1	4.1
81	147.2	....	....	......	....	....	150.8	3.6	2.4	......	....	....	158.0	7.2	4.8	......	....	....
82	147.3	7.3	7.3	......	....	....	151.0	3.7	2.6	154.3	....	....	159.0	8.0	5.3	163.0	8.7	5.6
83	147.8	5.6	3.9	......	....	....	155.2	7.4	5.0	157.6	....	....	159.4	4.2	2.7	......	....	....
84	148.4	....	....	......	....	....	154.0	5.6	3.8	......	....	....	156.0	2.0	1.3	......	....	....
85	148.7	....	....	152.4	6.9	4.7	155.5	6.8	4.6	......	....	....	160.7	5.2	3.3	162.1	....	....
86	149.2	5.2	3.6	......	....	....	157.4	8.2	5.5	......	....	....	162.0	4.6	2.9	......	....	....
87	......	....	....	149.8	5.4	3.7	154.8	....	....	......	....	....	162.2	7.4	4.8	......	....	....
88	150.4	....	....	154.1	10.0	6.9	158.2	7.8	5.2	......	....	....	162.2	4.0	2.5	162.9	....	....
89	151.7	3.2	2.2	......	....	....	160.0	8.3	5.5	......	....	....	......	....	....	166.3	....	....
90	......	....	....	151.4	9.0	6.3	......	....	....	156.6	5.2	3.4	......	....	....	159.0	2.4	1.5
91	......	....	....	154.9	....	....	......	....	....	160.0	5.1	3.3	163.7	....	....	164.7	4.7	2.9
92	155.8	11.5	7.9	......	....	....	161.0	5.2	3.3	......	....	....	163.0	2.0	1.2	164.6	....	....
93	156.2	....	....	157.7	....	....	159.2	3.0	2.9	162.0	4.3	2.7	162.4	3.2	2.0	......	....	....
94	......	....	....	157.0	10.9	7.5	......	....	....	160.6	3.6	2.3	162.2	....	....	......	....	....
95	156.6	7.0	4.6	......	....	....	163.8	7.2	4.6	......	....	....	167.6	3.8	1.3	......	....	....
96	158.0	8.0	5.3	......	....	....	158.7	.7	.4	161.2	....	....	162.0	3.3	2.1	162.2	1.0	.6
97	159.0	....	....	......	....	....	164.8	5.8	3.6	......	....	....	167.0	2.2	1.3	......	....	....
98	......	....	....	161.0	7.0	4.5	......	....	....	167.8	6.8	4.2	......	....	....	169.4	1.6	1.0
99	......	....	....	163.6	5.6	3.5	......	....	....	167.0	3.4	2.1	......	....	....	168.0	1.0	.6
100	......	....	....	164.2	8.2	5.3	......	....	....	169.0	4.8	2.9	......	....	....	170.6	1.6	.9
Av	145.2	6.6	4.7	147.4	7.7	5.3	151.8	6.0	4.1	153.9	4.6	3.0	155.9	4.7	3.0	158.7	4.2	2.6
Av. var	......	1.9	....	......	1.5	....	......	1.8	....	......	1.2	....	......	1.7	....	......	2.5	....

50 girls from 12 to 17 years of age with consecutive measurements.

15 years.			15½ years.			16 years.			16½ years.			17 years.			
Height.	Increment, 14–15 years.	Per cent gain.	Height.	Increment, 14½–15½ years.	Per cent gain.	Height.	Increment, 15–16 years.	Per cent gain.	Height.	Increment, 15½–16½ years.	Per cent gain.	Height.	Increment, 16–17 years.	Per cent gain.	No.
Cm.	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		
......	......	......	148.0	3.0	2.1	150.0	......	......	150.0	2.0	1.4	......	......	......	51.
150.0	5.6	3.9	......	......	......	150.8	0.8	0.5	......	......	......	150.8	0.0	0.0	52.
......	......	......	154.0	6.0	4.0	......	......	......	......	......	......	......	......	......	53.
147.8	3.8	2.6	......	......	......	150.4	2.6	1.8	......	......	......	151.1	......	......	54.
150.6	6.4	4.4	......	......	......	154.1	3.5	2.3	......	......	......	156.4	2.3	1.5	55.
......	......	......	157.0	4.8	3.2	......	......	......	159.8	2.8	1.8	......	......	......	56.
154.0	6.1	4.1	156.7	3.7	2.4	157.7	3.7	2.4	......	......	......	160.0	2.3	1.5	57.
......	......	......	153.2	2.8	1.9	......	......	......	153.2	.0	.0	......	......	......	58.
149.2	.8	.5	......	......	......	151.4	2.2	1.5	......	......	......	151.6	.2	.1	59.
......	......	......	155.0	1.4	.9	......	......	......	156.6	1.6	1.0	......	......	......	60.
152.0	4.0	2.7	......	......	......	153.8	1.8	1.2	......	......	......	......	......	......	61.
155.2	3.4	2.2	157.1	......	......	......	......	......	158.7	1.6	1.0	158.7	......	......	62.
152.1	3.6	2.4	......	......	......	152.0	— .1	— .7	153.4	......	......	......	......	......	63.
155.0	3.8	2.5	......	......	......	158.7	3.7	2.4	158.7	......	......	158.7	......	.0	64.
156.0	4.0	2.6	......	......	......	158.0	2.0	1.3	......	......	......	159.0	1.0	.6	65.
159.6	1.9	1.2	161.4	2.7	1.7	161.5	1.9	1.2	161.6	.2	.1	161.6	.1	......	66.
......	......	......	149.1	......	......	......	......	......	151.0	1.9	1.3	......	......	......	67.
......	......	......	163.2	3.2	2.0	......	......	......	163.8	.6	.4	......	......	......	68.
161.0	......	......	......	......	......	160.6	— .4	— .3	......	......	......	166.0	5.4	3.4	69.
......	......	......	156.6	2.0	1.3	......	......	......	156.2	— .4	— .3	......	......	......	70.
155.0	3.9	2.6	......	......	......	155.0	......	.0	......	......	......	154.5	— .5	— .3	71.
159.0	3.2	2.1	......	......	......	159.8	.8	.5	......	......	......	160.4	.6	.4	72.
152.1	1.5	1.0	......	......	......	152.3	.2	.1	......	......	......	152.3	.0	.0	73.
......	......	......	151.6	.6	.4	......	......	......	152.2	.6	.4	......	......	......	74.
156.6	.2	.1	......	......	......	158.4	1.8	1.2	......	......	......	158.4	.0	.0	75.
......	3.5	2.3	......	3.0	2.0	......	1.6	1.0	......	1.1	.7	......	1.0	.7	
......	1.3	......	......	1.1	......	......	1.1	......	......	.9	......	......	1.3	......	
163.0	3.6	2.3	......	......	......	165.0	2.0	1.2	......	......	......	167.0	2.0	1.2	76.
163.0	5.6	3.6	......	......	......	......	......	......	......	......	......	166.0	......	......	77.
167.0	......	......	169.2	4.1	2.5	170.0	3.0	1.8	170.0	.8	.5	......	......	......	78.
......	......	......	163.8	3.8	2.4	......	......	......	164.8	1.0	.6	......	......	......	79.
......	......	......	162.5	8.1	5.2	......	......	......	166.3	3.8	2.3	......	......	......	80.
163.2	5.2	3.3	164.0	......	......	164.4	1.2	.7	......	......	......	164.8	.4	.2	81.
164.2	5.2	3.3	......	......	......	166.3	2.1	1.3	166.3	......	......	167.0	.7	.4	82.
162.6	3.2	2.0	......	......	......	164.6	2.0	1.2	......	......	......	164.6	.0	.0	83.
158.6	2.6	1.7	......	......	......	159.4	.8	.5	......	......	......	159.6	.2	.1	84.
163.0	2.3	1.4	......	......	......	......	......	......	164.4	......	......	......	......	......	85.
166.0	4.0	2.5	......	......	......	167.0	1.0	.6	......	......	......	168.0	1.0	.6	86.
164.4	2.2	1.4	......	......	......	169.2	4.8	2.9	......	......	......	170.8	1.6	.9	87.
163.4	1.2	1.7	165.0	2.1	1.3	......	......	......	165.4	.4	.2	166.0	......	......	88.
167.6	......	......	......	......	......	168.8	1.2	.7	......	......	......	170.1	1.3	.8	89.
......	......	......	160.3	1.3	.8	......	......	......	160.3	.0	.0	......	......	......	90.
165.8	2.1	1.3	166.5	1.8	1.1	......	......	......	167.6	1.1	.7	167.7	......	......	91.
......	......	......	......	......	......	166.2	......	......	167.0	......	......	......	......	......	92.
......	......	......	......	......	......	163.0	......	......	163.5	......	......	......	......	......	93.
162.8	.6	.4	......	......	......	......	......	......	162.8	......	......	163.8	......	......	94.
169.6	2.0	1.2	170.4	......	......	......	......	......	170.8	.4	.2	......	......	......	95.
162.5	.5	.3	162.5	.3	.2	162.5	.0	.0	162.5	.0	.0	163.7	1.2	.7	96.
170.4	3.4	2.0	......	......	......	170.6	.2	.1	......	......	......	170.6	.0	.0	97.
......	......	......	170.8	1.4	.8	......	......	......	171.0	.2	.1	......	......	......	98.
......	......	......	168.0	.0	.0	......	......	......	168.0	.0	.0	......	......	......	99.
......	......	......	171.4	.8	.5	......	......	......	171.4	.0	.0	......	......	......	100.
159.0	2.9	1.8	160.7	2.4	1.5	160.0	1.7	1.0	161.8	.7	.4	161.1	.8	.5	
......	1.3	......	......	1.5	......	......	1.0	......	......	.7	......	......	.6	......	

7. AVERAGE INCREMENTS IN HEIGHT, WEIGHT, AND LUNG CAPACITY.

A study of the individual measurements in height reveals different correlations in growth for boys and girls above the median (average) from those below. That is, the rhythms of fluctuations of growth for tall children differ materially from those for short children. This is demonstrated by the norms found, which serve in this connection as a temporary expedient for estimating the relative heights of this group of children and as a means for dividing them into two general groups, those lying on and above the median and those lying below the median. There are some who cross the median, and others whose curves fluctuate toward or from the median. Those lying above the median height begin and end their periods of acceleration and arrest earlier than those below the median. The increment tables following give the averages and average variations in yearly and half-yearly increments for boys and for girls in height and weight in the two Chicago schools and in the Horace Mann School.

As will be noted, the results give the greatest absolute increment and the greatest average deviations during the adolescent period, beginning at 12 years of age for boys above the median height and beginning at 10½ years for the girls above the median. This marked acceleration continues until 15½ for boys and until 13 for girls. For those below the median height the greatest average acceleration begins at 14 years for boys, and at 11½ years for girls, and continues, for the boys, until 17½ and for the girls until 15½. The tables also show there is a period of slightly more marked acceleration or arrest from 6 to 8 years of age, depending on the relative height and the median. There then follows a gradual decrease in absolute and relative increment until the advent of the pubescent increase. The results hold for each school separately and for the groups collectively, for boys and for girls.

No individuals were eliminated whose measurements and ages were found to be accurate, but as stated above there were some whose first measurements were below the median and whose last measurements were above the median; these were grouped with those above the median. There were a few others whose first measurements were above the median and whose last measurements were below the median; these were grouped with those below the median. The fluctuations in the growth of these latter children tend to obliterate the characteristics of the two main groups, i. e., they tend to destroy rather than accentuate the most common pubescent tendencies of each group. It did not, however, seem best to form a separate division of these "crosses," since it would be impossible to draw a distinct line of demarcation between those above and those below the median.

The rhythms and fluctuations of growth in height for the children above the median show that these boys and girls mature in physiological growth earlier than those below the median, since their periods of acceleration and arrest begin earlier and end earlier. There are individual measurements lying on either side of these medians, arranged in all probability in a normal distribution from the tallest to the shortest for each chronological age. If this is the case, as the individual curves will show, we are justified in making averages or medians only when the average or norm is based on the physiological age instead of the chronological age. A new and very important educational problem is evoked here: How may we formulate a measuring scale for determining the physiological age of the child? A careful study of individual growth curves, based on consecutive measurements, it is hoped, will help to answer this question.

These significant characteristics of tall and short children, differing in their periods of acceleration and arrest, may also be noted in the groups of 200 individuals whose heights and increments are given in Tables 4, 5, and 13 to 22.

TABLE 6.—*Averages and average deviations of height and weight increments of boys and girls, from the University of Chicago schools and the Francis W. Parker School.*

Ages.	Boys.								Girls.							
	Height.				Weight.				Height.				Weight.			
	Above median.		Below median.		Above median.		Below median.		Above median.		Below median.		Above median.		Below median.	
	Average.	Average deviation.	Average.	Average deviation.	Average.	Average deviation.	Average.	Average deviation.	Average.	Average deviation.	Average.	Average deviation.	Average.	Average deviation.	Average.	Average deviation.
	Cm.	*Cm.*	*Cm.*	*Cm.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Cm.*	*Cm.*	*Cm.*	*Cm.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
6 - 6½	4.4	0.3	4.1	0.5	....	....	....	....	2.9	0.2	1.6	0.4	3.1	1.0	2.4	....
6½- 7	....	....	3.1	1.1	....	....	2.3	1.9	2.9	.4	3.6	.6	3.1	1.4	3.8	0.4
6 - 7	6.4	1.4	4.7	.8	....	....	2.0	2.4	4.7	.4	5.7	.4	3.2	1.7	5.4	.4
7 - 7½	4.3	.6	3.5	.7	5.8	3.4	1.4	1.1	2.6	1.0	2.3	.0	1.0	.7	2.7	.5
6½- 7½	6.0	1.8	4.4	1.5	8.5	1.9	3.6	2.2	5.2	1.2	5.2	.5	5.0	1.0	4.0	.3
7½- 8	3.1	.7	3.0	1.0	6.8	4.4	3.5	.9	2.6	.9	2.1	.5	3.1	1.9	1.5	.0
7 - 8	6.4	1.0	5.5	.8	9.2	2.1	5.2	1.2	4.9	.9	5.2	1.2	3.4	2.5	4.4	1.9
8 - 8½	2.9	.8	2.0	.5	4.5	2.7	1.8	1.6	2.7	.7	2.9	.9	3.4	1.2	1.9	.7
7½- 8½	5.7	.8	5.3	.9	5.6	4.0	7.4	2.5	5.5	1.1	5.2	.9	5.1	2.5	6.6	2.5
8½- 9	2.9	.9	2.2	1.2	3.9	2.3	1.9	1.9	3.1	.8	2.5	.6	3.4	2.6	2.6	4.4
8 - 9	5.3	1.3	4.6	1.1	4.9	2.1	4.8	1.3	5.1	1.3	5.0	.8	7.6	2.8	5.9	1.7
9 - 9½	3.3	.8	3.3	.9	2.3	1.4	2.4	1.5	2.6	.9	2.9	.8	4.5	2.5	2.2	2.3
8½- 9½	5.4	1.3	5.0	.5	5.1	4.5	5.6	2.3	5.3	.8	5.0	1.2	9.2	7.6	5.0	1.4
9½-10	2.2	1.1	2.9	.8	8.8	1.2	4.8	1.9	3.0	.7	3.1	1.0	3.9	1.7	2.3	2.7
9 -10	5.4	.7	4.4	.7	5.6	1.7	4.7	2.0	5.2	1.1	4.7	1.6	6.5	2.4	4.6	1.5
10 -10½	2.8	.8	3.9	1.4	3.3	1.2	3.4	1.3	3.4	1.0	2.6	.7	5.6	2.9	4.2	3.6
9½-10½	4.6	1.4	4.2	.9	4.8	2.1	4.3	1.9	5.9	1.3	4.7	1.1	8.0	4.4	6.2	1.7
10½-11	2.3	.7	2.4	1.2	2.7	1.7	3.2	.8	2.7	1.0	3.2	1.5	3.6	2.7	2.7	1.8
10 -11	4.6	.9	4.2	1.3	4.8	2.7	2.9	1.8	5.3	1.7	5.9	1.3	7.3	3.8	6.6	4.4
11 -11½	2.6	1.7	2.0	.7	2.9	3.6	3.1	.8	3.6	1.3	1.9	.6	5.1	2.1	3.9	1.3
10½-11½	4.9	1.0	5.4	1.2	8.5	2.8	5.9	2.1	7.4	1.9	4.3	.9	9.2	3.9	6.0	2.5
11½-12	3.3	.8	2.8	1.8	6.3	4.3	5.1	3.3	3.7	1.4	3.2	.9	6.9	3.5	4.1	2.4
11 -12	5.2	1.4	4.6	1.3	8.6	3.3	6.0	1.9	7.0	1.7	5.3	1.1	10.9	4.6	7.1	3.1
12 -12½	3.4	1.3	2.4	.3	4.1	1.7	2.7	1.5	4.1	1.2	3.0	1.0	8.8	4.1	5.9	2.4
11½-12½	5.2	1.6	5.0	1.6	9.6	5.0	6.5	3.7	7.5	1.7	6.2	1.5	15.2	5.5	9.1	3.5
12½-13	4.1	1.0	2.0	.9	6.0	2.4	3.8	1.7	3.3	1.4	4.0	1.7	4.9	3.4	7.1	2.6
12 -13	6.2	2.0	4.6	1.3	10.0	4.8	5.8	2.9	6.6	1.4	6.2	2.4	11.7	4.0	9.6	3.1
13 -13½	4.0	1.8	2.8	1.3	10.4	5.1	4.5	3.4	2.6	1.0	3.6	.7	6.3	4.2	4.9	2.0
12½-13½	6.3	2.3	5.4	1.5	9.7	4.0	9.9	4.2	5.2	1.2	6.1	2.0	11.8	4.8	10.2	3.0
13½-14	3.0	.3	4.0	1.5	5.0	2.8	6.7	3.0	2.0	1.2	2.7	1.2	4.7	3.7	3.9	3.1
13 -14	5.4	2.0	5.3	1.5	10.6	5.1	8.8	5.3	4.0	1.4	5.7	1.7	10.4	5.4	11.1	5.1
14 -14½	5.2	1.2	3.9	1.2	7.2	4.6	6.0	3.8	1.5	.3	2.9	.9	5.4	6.3	6.5	4.0
13½-14½	6.3	1.7	5.3	1.5	13.0	3.1	14.0	3.3	4.1	1.5	6.3	2.1	11.5	3.5	11.9	6.1
14½-15	4.2	1.5	3.6	.9	11.1	1.4	9.2	1.1	1.1	.9	1.2	1.0	3.5	2.8	6.7	4.3
14 -15	7.6	1.3	8.3	.7	16.9	.5	12.5	3.8	2.5	.9	3.9	1.6	9.2	4.3	11.7	4.7
15 -15½	3.4	1.0	3.6	1.0	14.0	6.0	8.4	1.5	1.2	1.1	1.3	.9	2.8	2.7	1.7	4.3
14½-15½	6.1	2.3	7.2	1.3	14.9	2.6	15.2	3.2	2.8	1.2	3.1	1.8	5.3	2.4	8.1	2.1

15½–16	2.1	.4	3.6	1.4	1.5	.6	8.5	2.7	.4	.4	.5	.6	1.5	4.4	1.1	2.1
15 –16	4.9	.1	6.8	2.0	17.2	7.4	11.6	6.8	1.8	1.5	1.2	.7	4.6	2.3	4.9	3.1
16 –16½.....	1.5	1.2	2.8	1.4	6.0	1.0	9.5	3.2	.4	.4	.6	.6	.7	3.1	1.8	3.2
15½–16½.....	2.2	2.1	5.8	2.2	13.2	4.4	13.6	5.9	1.4	.9	1.4	.9	– .6	4.6	4.1	3.7
16½–17	2.5	....	4.8	2.4	....	....	6.5	2.4	.6	.6	.8	.6	2.6	1.5	1.1	4.5
16 –17	....	....	4.9	3.8	....	....	12.9	2.1	.7	.6	.7	.5	3.3	2.8	5.5	3.8
17 –17½.....	....	....	2.3	.2	....	....	8.4	6.5	.2	.3	.6	.3	2.8	2.4	2.6	3.0
16½–17½.....	....	....	6.1	2.6	....	....	11.7	4.3	.7	.5	.9	.9	4.3	.7	6.6	1.1
17½–18	....	....	1.5	.5	....	....	7.7	5.0	.4	.5	.4	.1	–2.4	2.6	–1.2	4.2
17 –18	....	....	4.0	2.4	....	....	....	....	.4	.3	.4	.4	.2	3.0	5.2	.0

TABLE 7.—*Averages and average deviations of height and weight increments of boys and girls from the Horace Mann School.*

Ages.	Boys.								Girls.							
	Height.				Weight.				Height.				Weight.			
	Above median.		Below median.		Above median.		Below median.		Above median.		Below median.		above median.		Below median.	
	Average.	Average deviation.	Average.	Average deviation.	Average.	Average deviation.	Average.	Average deviation.	Average.	Average deviation.	Average.	Average deviation.	Average.	Average deviation.	Average.	Average deviation.
	Cm.	*Cm.*	*Cm.*	*Cm.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Cm.*	*Cm.*	*Cm.*	*Cm.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
6 – 7	7.2	1.1	4.9	1.1	6.5	2.4	4.8	1.8	6.5	1.4	5.4	0.5	5.0	1.1	4.5	1.1
6½– 7½.....	5.6	.6	4.8	.9	4.7	1.8	4.6	.6	6.2	.6	5.8	1.1	5.9	1.4	4.2	1.6
7 – 8	5.9	.9	4.8	.7	7.3	1.8	5.5	1.5	6.2	1.2	5.6	.8	5.9	2.8	4.5	1.3
7½– 8½.....	5.9	.7	4.7	.7	7.5	1.6	4.9	2.0	5.4	.8	5.1	.9	6.5	1.8	4.6	1.5
8 – 9	5.6	.7	4.9	1.2	7.8	2.4	5.7	2.1	5.6	.9	5.1	.6	8.3	3.7	6.0	2.4
8½– 9½.....	5.2	.7	5.2	.9	6.1	2.1	4.9	1.2	5.7	.9	4.8	.6	7.8	2.3	5.1	1.9
9 –10	5.3	.7	4.8	.8	6.9	1.9	5.8	2.1	5.7	1.3	5.0	.7	8.7	4.3	6.4	2.6
9½–10½.....	4.9	.7	4.3	.6	6.9	2.3	6.0	1.1	6.0	.9	4.5	.5	7.9	3.4	5.8	2.5
10 –11	4.8	.6	4.2	.7	5.7	2.2	3.9	1.5	5.7	1.1	5.1	.9	8.7	3.3	7.7	3.0
10½–11½.....	3.7	1.0	4.0	.7	8.6	2.9	5.7	1.9	6.5	1.4	4.9	.9	11.1	4.4	5.9	2.2
11 –12	5.3	1.0	4.5	1.0	8.3	4.4	5.4	1.4	7.1	1.5	5.9	1.0	12.2	4.1	8.5	4.0
11½–12½.....	5.4	1.4	4.9	1.1	8.4	3.8	6.6	2.5	7.1	1.5	5.5	1.0	10.7	4.4	9.7	3.5
12 –13	6.4	1.4	5.1	1.3	13.1	6.9	7.6	2.7	5.7	1.6	5.9	1.5	11.1	3.2	10.8	3.7
12½–13½.....	6.5	1.7	5.4	1.3	10.3	4.9	7.2	3.4	5.1	1.4	6.4	1.0	11.8	4.4	13.3	6.9
13 –14	7.2	1.8	5.5	1.6	11.1	4.1	10.3	4.1	3.8	1.7	4.4	1.4	10.8	6.0	11.0	4.2
13½–14½.....	6.9	2.1	5.8	1.8	11.9	3.9	10.1	3.3	3.5	1.4	3.5	1.3	9.4	5.2	10.5	4.3
14 –15	6.5	2.1	6.6	2.4	11.7	4.8	12.0	3.3	2.8	1.6	2.7	1.6	8.0	4.3	7.8	4.3
14½–15½.....	6.4	2.3	6.2	2.4	11.2	5.6	14.1	1.8	1.2	6.3	1.8	1.6	5.7	3.2	9.5	3.5
15 –16	5.1	2.0	5.7	1.9	15.2	4.9	13.8	3.3	1.2	1.0	2.2	1.0	6.8	4.0	5.3	3.9
15½–16½.....	3.9	1.2	4.6	2.7	13.3	5.8	10.1	3.6	.8	.6	1.4	1.0	3.4	4.8	4.3	3.9
16 –17	4.9	2.6	3.7	2.3	9.6	4.5	7.3	1.8	1.2	.8	.8	.6	3.8	6.0	2.9	2.7
16½–17½.....	2.2	1.2	3.2	1.2	9.2	3.1	5.5	3.5	.4	.5	.2	.3	2.0	4.0	2.0	4.7
17 –18	1.5	.7	2.0	1.3	1.3	4.5	1.1	.0	.5	.4	.5	.5	3.9	4.3	5.2	2.0

Since these children were not all measured an equal number of times and, therefore, individuals are constantly entering and leaving the yearly and half-yearly groups, the sum of the averages of the half-yearly increments do not in all cases equal the averages of the yearly increments. These conditions vitiate the results in so far that we do not have a truly homogeneous group throughout. These facts explain why it is not possible to get an average increment by taking the difference between the average measurement of two intervals, since this method would in some cases give a minus quantity if a majority of tall individuals were in the former and not in the latter group. The individual increments also help to explain why the composite curve of the average heights based on single measurements of different individuals at different ages does not represent the growth of any individual or any group of individuals. Therefore the method of finding averages on single measurements, which has been universally used in the past (on account of lack of data based on consecutive measurements), must be abandoned as a method for obtaining norms.

The following are some of the greatest gains in height, weight, and lung capacity among all the boys and girls included in the entire study. Those whose numbers are below 200 have been taken from the tables just given and the other ones from the groups of individual growth curves. The largest increments of growth are as follows:

TABLE 8.—*Largest individual increments in growth.*

INCREASE IN HEIGHT.

BOYS BELOW THE MEDIAN HEIGHT.

Numbers.[1]	Age.			Height.	Age.			Height.	Increase in height.	
	Y.	*m.*	*d.*	*Cm.*	*Y.*	*m.*	*d.*	*Cm.*	*Cm.*	*Per ct.*
151	12	4	19	137.2	13	8	19	149.0	11.8	8.6
153	15	1	6	149.2	16	0	2	159.0	9.8	6.7
153	16	0	2	159.0	17	1	3	170.0	11.0	6.9
156	15	11	17	154.9	16	11	18	165.6	10.7	7.0
165	13	5	20	147.2	14	5	6	157.5	10.3	7.0
174	14	4	24	155.2	15	5	9	165.7	10.5	6.8

BOYS ABOVE THE MEDIAN HEIGHT.

128	11	9	9	156.5	12	9	7	166.7	10.2	6.5
176	14	0	0	148.5	15	0	0	158.3	9.8	6.6
187	13	2	5	156.1	14	4	22	167.0	10.9	7.0
189	14	3	9	159.3	15	4	15	169.5	10.2	6.4

GIRLS BELOW THE MEDIAN HEIGHT.

53	13	2	18	139.5	14	5	1	149.0	9.5	6.6
82	13	6	30	154.3	14	7	20	163.0	8.7	5.6
20	11	11	0	137.0	13	3	0	147.3	10.3	7.5
106	13	5	0	141.9	14	5	2	153.1	11.2	7.9
831	11	3	4	138.6	12	4	9	148.8	10.2	7.4

[1] These numbers correspond to those in Tables 4, 5, and 13-22, and in the Health Notes, pp. 118-134.

Table 8.—*Largest individual increments in growth*—Continued.

Increase in Height—Continued.

GIRLS ABOVE THE MEDIAN HEIGHT.

Numbers.	Age.			Height.	Age.			Height.	Increase in height.	
	Y.	*m.*	*d.*	*Cm.*	*Y.*	*m.*	*d.*	*Cm.*	*Cm.*	*Per ct.*
92	10	9	19	144.3	12	1	3	155.8	11.5	7.9
94	11	3	22	146.1	12	7	13	157.2	11.1	7.6
95	10	4	26	145.6	11	8	9	156.8	11.2	7.7
97	10	10	19	144.3	12	1	3	155.8	11.5	8.0
99	11	4	23	146.1	12	7	10	157.9	11.8	8.1
64	9	10	12	138.9	11	4	29	151.4	12.5	9.0
49	10	9	13	147.9	11	11	10	157.5	9.6	6.5
310	11	9	12	147.6	12	7	4	158.5	10.9	7.4

Largest Increments of Growth in Weight.

BOYS BELOW THE MEDIAN WEIGHT.

Numbers.	Age.			Weight.	Age.			Weight.	Increment.	
	Y.	*m.*	*d.*	*Lbs.*	*Y.*	*m.*	*d.*	*Lbs.*	*Lbs.*	*Per ct.*
151	12	4	19	66.3	13	8	19	87.5	21.2	32.0
172	15	8	7	117.0	16	6	6	141.7	24.7	21.1

BOYS ABOVE THE MEDIAN WEIGHT.

176	14	4	26	93.2	15	5	9	117.5	24.3	26.1
140	9	8	3	70.2	10	8	15	87.6	17.4	24.7
146	11	11	2	110.7	12	11	7	133.1	22.4	22.0
191	14	6	5	108.0	15	6	24	132.0	24.0	22.2

GIRLS BELOW THE MEDIAN WEIGHT.

17	9	11	26	53.9	10	11	30	77.2	23.3	43.2
52	13	10	23	97.9	14	10	3	117.3	19.4	19.8
54	13	11	12	78.0	15	1	13	97.2	19.2	24.6
66	12	10	26	94.5	13	10	23	113.8	19.3	20.3
70	12	7	0	78.1	13	4	16	98.1	20.0	25.5
74	14	5	9	111.8	15	5	0	131.1	19.3	17.2

GIRLS ABOVE THE MEDIAN WEIGHT.

101	11	5	24	79.9	12	6	18	115.6	35.7	45.5
43	11	4	10	125.0	12	5	8	149.9	24.9	18.0
2160	10	2	21	72.2	11	2	20	96.8	24.8	34.3
47	11	3	10	104.5	12	3	14	124.9	20.4	19.5
98	12	6	11	127.0	13	9	24	147.8	20.8	16.3
100	12	9	0	103.2	13	7	24	124.2	21.0	20.3

Largest Increments of Growth in Lung Capacity.

BOYS BELOW THE MEDIAN HEIGHT.

Numbers.	Age.			Lung capacity.	Age.			Lung capacity.	Increment.	
	Y.	*m.*	*d.*	*Cu. in.*	*Y.*	*m.*	*d.*	*Cu. in.*	*Cu. in.*	*Per ct.*
151	14	4	8	163	15	4	7	210	47	28.8
153	16	0	2	170	17	1	3	220	50	28.8
162	16	3	6	215	17	3	3	265	50	23.2
171	10	10	1	106	11	11	21	150	44	43.4

TABLE 8.—*Largest individual increments in growth*—Continued.

LARGEST INCREMENTS OF GROWTH IN LUNG CAPACITY—Continued.

Numbers.	Age.			Lung capacity.	Age.			Lung capacity.	Increment.	
	Y.	*m.*	*d.*	*Cu. in.*	*Y.*	*m.*	*d.*	*Cu. in.*	*Cu. in.*	*Per c'.*
BOYS ABOVE THE MEDIAN HEIGHT.										
128	11	9	9	184	12	9	7	230	46	25.0
139	12	1	21	100	13	1	20	145	45	45.0
179	13	9	22	152	14	10	13	218	66	36.8
187	13	3	5	164	14	4	22	212	48	28.7
192	13	7	14	188	14	3	24	238	50	26.6
199	13	1	26	190	14	2	0	240	50	33.3
GIRLS BELOW THE MEDIAN HEIGHT.										
14	11	2	9	112.8	12	1	6	180.0	67.2	59.5
19	12	0	7	130.0	13	0	15	180.0	50.0	38.5
20	11	1	19	76.0	12	1	2	112.0	36.0	46.3
21	9	7	24	95.0	10	6	27	130.0	35.0	36.8
53	13	3	18	128.0	14	5	2	160.0	32.0	25.0
GIRLS ABOVE THE MEDIAN HEIGHT.										
36	10	2	7	96	11	8	11	159.2	63.2	65.8
46	6	5	17	70	7	5	17	108.0	38.0	54.2
46	11	4	8	142	12	4	0	190.0	48.0	33.8
86	13	10	14	154	10	5	0	190.0	36.0	23.4
86	14	10	5	190	15	10	2	234.0	44.0	23.1

The greatest yearly gain in height for these boys below the median is approximately 10 centimeters per year, and as a rule these gains are made after 14 years of age; for those above the median the gain is approximately the same, but occurs at 14 or earlier. The greatest gain in height for girls below the median is from 9 to 11 centimeters, and occurs after 12 years; for those above the median height it is from 10½ to 11 and occurs before 12 years of age.

The greatest gains in weight are after 12½ for the boys below the median and earlier for those above median height, as a rule. For the girls the greatest gains are after 13 for those below and before 13 for those above the median.

The greatest gains in lung capacity are after 14 as a rule for the boys below median height and before for those above median height. For girls there is little difference between those above and those below median height.

In an extensive study on physical growth, based on single measurements, Dr. H. P. Bowditch[1] calls attention to the asymmetrical nature of the trend of the growth curves and holds that large, tall children make their most rapid growth at an earlier age than the small ones, since the average and median values do not coincide. By using the same data, given by Bowditch, Dr. Franz Boas[2] applies supplementary statistical methods and concludes that Bowditch's conclusions are untenable. He says:

> The asymmetry is not accidental, for there will be as many children on a stage of development corresponding to that of their age plus a certain length of time as corresponding to that of their age minus a certain length of time.

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[1] Bowditch, H. P. Growth of children. Tenth an. rep. Mass. Bd. Health.

[2] Boas, F. On Townsend Porter's investigation of school children of St. Louis.

In his several reports on the growth of St. Louis children, Dr. William T. Porter[1] finds the same asymmetrical trends noted by Bowditch and repeatedly calls attention to the difference between the mean and average. Boas very plainly states: "I can not acknowledge that the conclusions reached regarding the growth of tall and short children are correct." He finds the constant occurring differences and their regular distribution between the mean and the average furnish the best proof that the curves under consideration are not probability curves. He believes, if this is the case, neither the average, nor the mean, nor the most frequent value represents the type of the age to which the curve refers. This can be determined only by detailed examination of the causes of the asymmetries.

To summarize briefly the differences in the two points of view Boas maintains that—

> When we consider children of a certain age, we may say that they will not all be on the same stage of development. Some will have reached a point just corresponding to their age, while others will be a little behind, and still others in advance of their age. Consequently the values of their measurements will not exactly correspond to those of their age. We may assume that the difference between their stage of development and that belonging to their exact age is due to accidental causes; so that just as many will be less developed as further developed than the average child of a particular age. Or there will be as many children on a stage of development corresponding to that of their age plus a certain length of time as corresponding to that of their age minus a certain length of time.—*Science, n. s. 1., 227.*

Porter's assumptions are based on Bowditch's data as well as his own, and he maintains that—

> The type of a certain deviation from the mean of an age will show the same degree of deviation from the mean at any subsequent age; for example, a type boy in the 75 percentile grade at age 6 will throughout his growth be heavier than 75 per cent of boys of his own age.—*Transactions of the Academy of Science of St. Louis, 4, p. 293.*

Boas objects to this assumption and holds that the average children do not hold their percentile rank. The individual growth curves included in the present investigation should go a long way toward solving this much-disputed question. It will be shown that both writers are partially correct, but neither could see the significance of his conclusion from the data at hand.

8. INDIVIDUAL GROWTH CURVES.

(a) HEIGHT AND WEIGHT.

The series of 28 charts show the individual growth curves in height, weight, and lung capacity for 170 individuals, giving in all 510 individual growth curves for various periods between 3 years 9 months and 18 years 6 months.

In carrying out a comparison graphically among forms so dissimilar in absolute size as those of height, body weight, and lung capacity, it was thought best to use the following units. In the height and weight curves the same base line division of 20 millimeters equals 12 months in age, while for the ordinates or vertical lines 40 millimeters equal 20 centimeters in height and 10 millimeters represent 20 pounds in weight. In the lung capacity charts a base line division of 15 millimeters is used for 12 months in age, and in the vertical or ordinates 10 millimeters represent 20 cubic inches in lung capacity. The original charts have been reduced in size and the millimeter lines taken out. The black lines represent distances of 20 millimeters on the height and weight charts and 15 and 10 millimeters on the lung capacity charts.

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[1] Porter, W. T. The growth of St. Louis children.

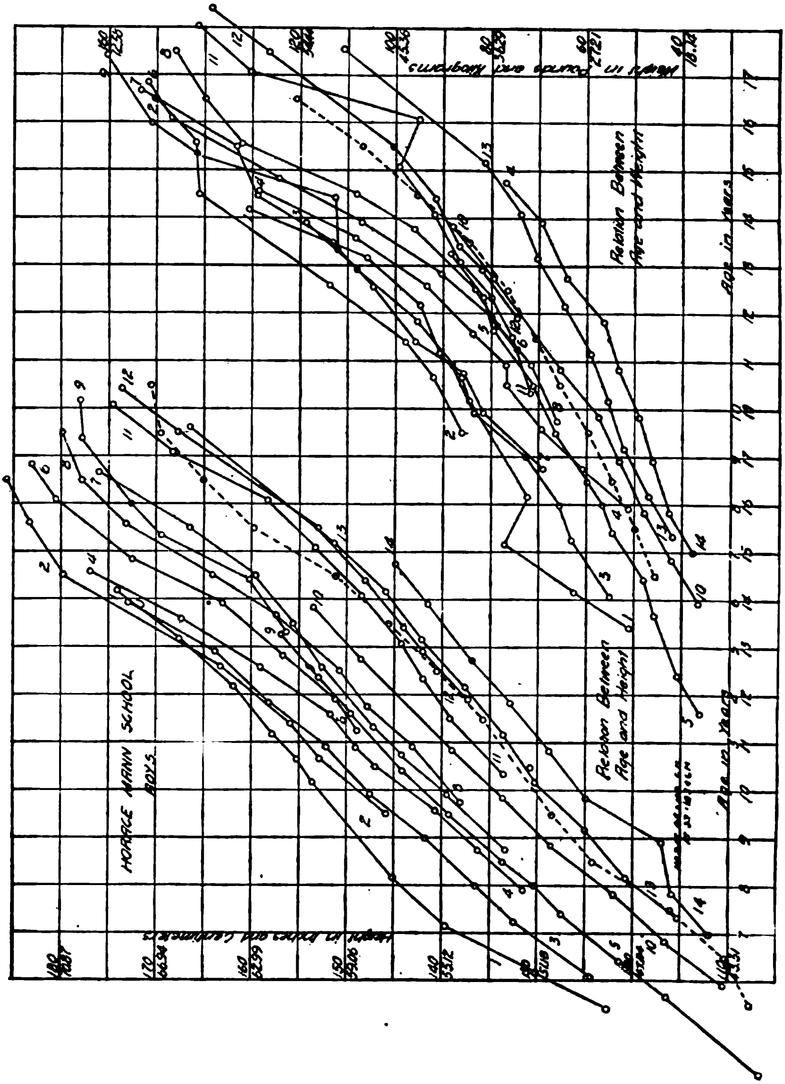


FIG. 1.—(Chart Ia) Height and weight curves for Horace Mann School boys.

The same Arabic numerals refer to the same individuals, respectively, for each of the 15 groups for all curves, for all health notes, and for all indices. The circles give the time of measurement; the ordinates represent the measurements accurately to within 0.4 of a centimeter or less, and the abscissæ the exact age within 14 days or less.

It is at once apparent that the direction of the curves shows the absolute increase, decrease, or uniformity of the increment of growth. A straight line of uniform pitch indicates an absolute increment for the same individual; therefore, in general, the degree of pitch of the line (curve) shows the relative amounts of increase of absolute increments for the same individual, and a change of the direction of a line at any circle (or point of measurement) indicates a decrease in the absolute increment if the line turns toward the horizontal, and an increase if it turns toward the vertical. The charts, therefore, like most growth curves, show graphically the absolute increments and not the percentage of increase over the initial measurements from period to period. The relative gain or per cent of increase or decrease may be obtaind from the preceding tables (4, 5, and 13–22) for comparison, if desired.

It should be noted that no attempt to select the individuals was made in the charts except to include a few that are tall and a few that are short in order that the height curves may be followed individually from measurement to measurement. The wide distribution of individuals from tallest to shortest may be noticed as a general characteristic of this group; there is a range of 35 centimeters in height between the tallest boy and the shortest boy at 14½ years. Since this wide range of distribution is uniformly present for all ages, a comparison of the growth of some very tall children with some short ones may be nicely observed when compared with the dotted curve which is "Boas's normal curve" based on the measurements of 45,151 boys for *one* measurement each.

A study of these height curves reveals at once that each boy holds approximately his relative position in the group for the periods included (Nos. 1, 8, and 9 are the only curves that cross, and in only one of these instances are two curves intersected), and on a percentile basis each would retain approximately his percentile grade; and that the relative shifting of the beginning of the adolescent acceleration from 12½ years for the tallest boy (No. 2) to 16 years for the shortest boy (No. 11) is a notable characteristic which has been referred to from time to time in the preceding pages. Occasionally there is a slight retardation before pubescent acceleration begins, and this, together with the shifting of the period, causes the curves to approximate in appearance a series of concentric arcs of varying sizes where a chronological point in the lower or outer arcs is reached later than in inner or upper arcs. If No. 1 curve, which is abnormal, is eliminated, there may be observed a fanning out of the curves from childhood to adolescence. When the individual growth curves in height for all the boys from both schools are compared, it will be noted that there is frequently an individual fluctuation in growth from 6 to 8 years of age, depending on the size of the boy, and there is a remarkable uniformity in the increase of increment after 6 or 8 years to the period of pubescent acceleration, with a slight decrease just before the adolescent acceleration.

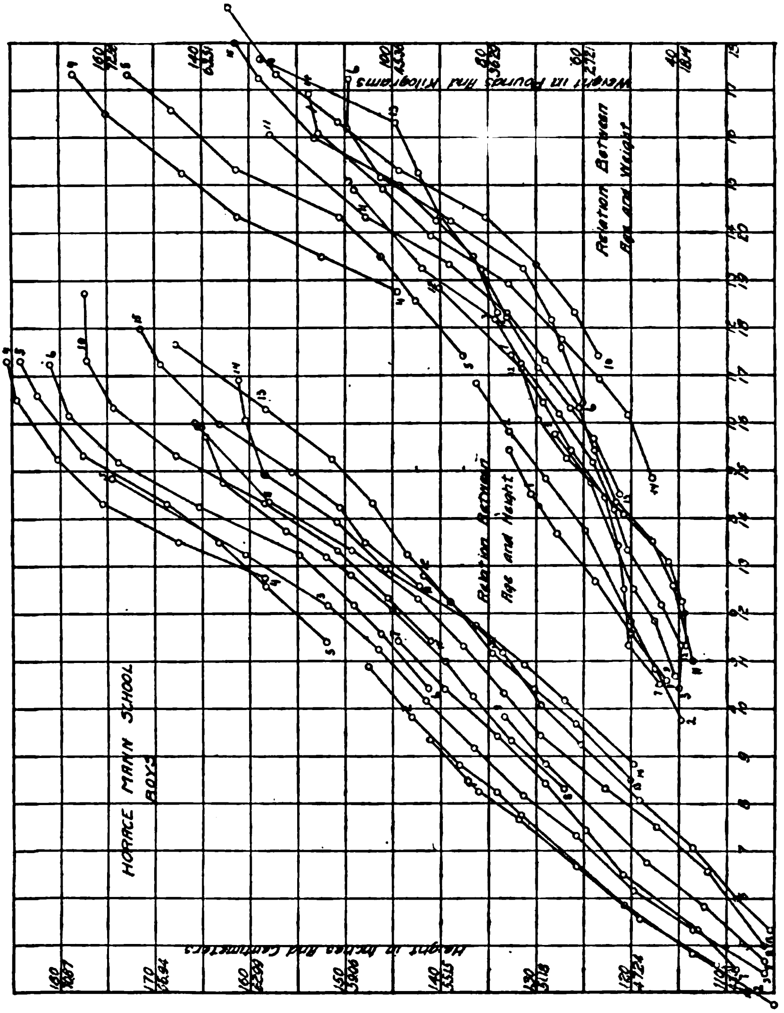
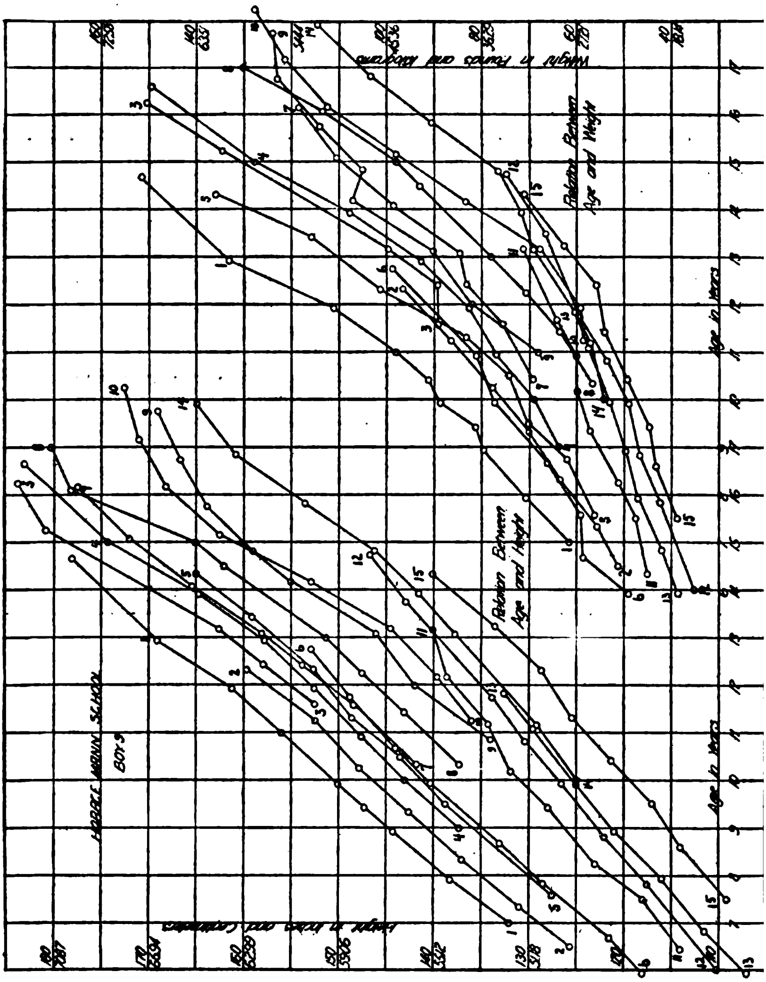


FIG. 2.—(Chart IIa) Height and weight curves for Horace Mann School boys.

The girls' curves illustrate at a glance smaller stature than that of the boys before 11 years and after 14. There is also here a uniformity in regard to relative stature for each individual throughout the periods included, and an earlier pubescent acceleration in the cases where there is an increase during this period. The general trend of curves shows slight decrease in increments from 7 years tc accelerated period, which like that of the boys, varies in occur with the initial height; the period of rapid growth is earlier fo taller girls; the shorter girls, like the shorter boys, reach their mat in growth at an older age. In Chart IVa (p. 42), for example



tallest girl of the group attained her maximum height at 14½ of age and the shortest at 17 years and 3 months.

When the curves for the girls are extended to the earlier perio childhood, there is a suggestion of change or variability in the i ments from 5 to 7 years of age, with a small range of differ similar to the boys during these earlier years. There is a slight in the curves, as a rule, between the ages of 7 and 11 years, aside the curves No. 1 and No. 9 of Chart Va, for example, which show no retardation or acceleration during the prepubescent and pubescent periods; the drop is more noticeable with girls than with boys. A period of marked retardation before adolescence is usually followed by a period of rapid acceleration during adolescence. If the increment of growth before adolescence is relatively uniform, this uniformity tends to persist throughout adolescence; and, as may be noted with No. 1 in Chart Va (p. 43) and No. 1 in Chart Ia (boys) (p. 38), when there is unusually rapid growth for the individual from 7 years to the beginning of adolescence, there is a decrease during adolescence, i. e., a reversion of the common rhythmic order.

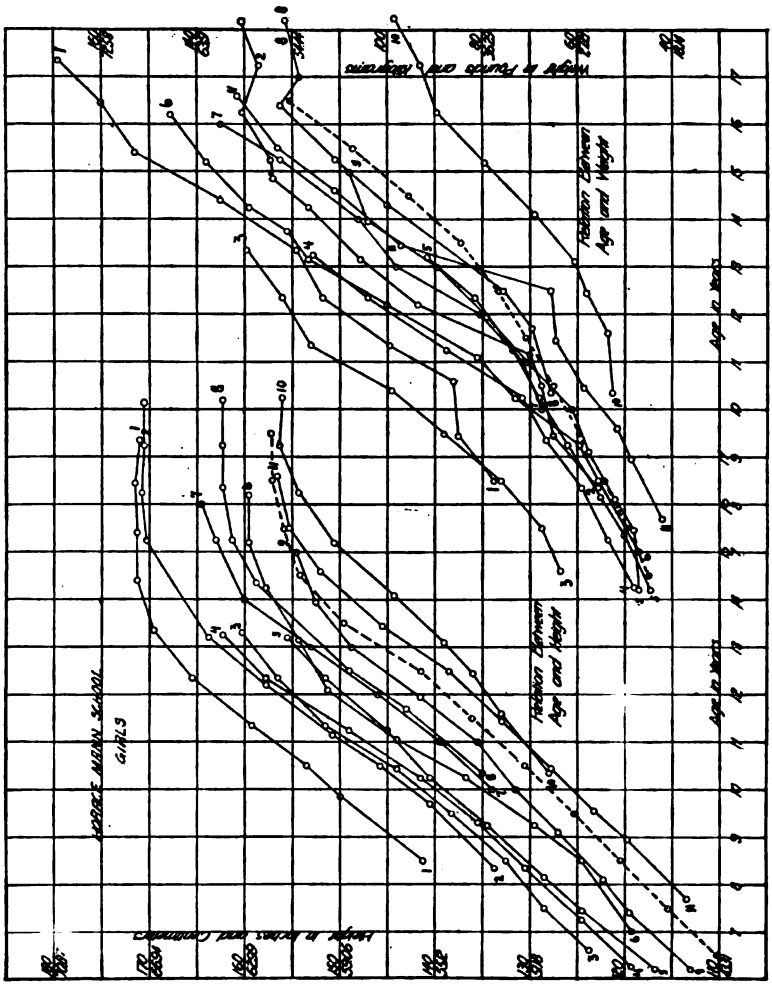


Fig. 4.—(Chart IVa) Height and weight curves for Horace Mann School girls.

The Francis W. Parker boys, when compared with the Horace Mann boys, show a closer range of distribution during adolescence;

they are inferior, on the average, in stature, and show more individual fluctuations from measurement to measurement, which may be due, in some instances, to slight variations of the conditions under which the measurements were made, such as the time of day, the reading of the stadiometer, or rhythms occurring during certain times of the month or year, since the measurements were taken at such short intervals that the variation of a few centimeters would be very apparent in the curves as plotted.

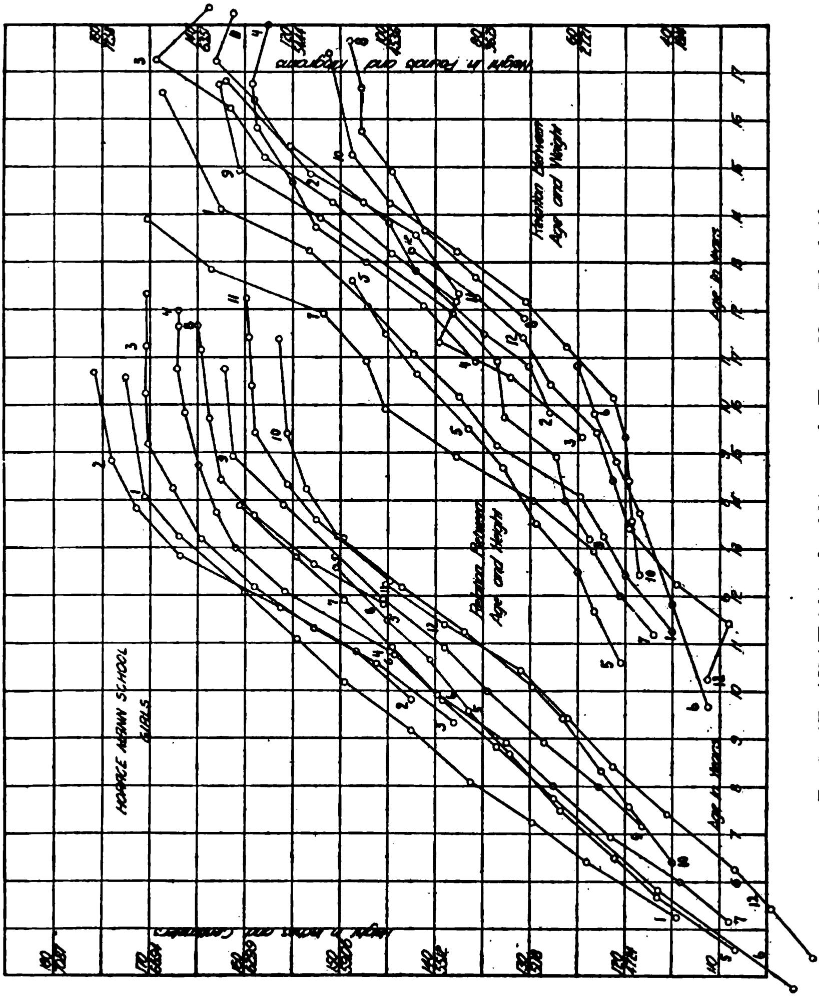


FIG. 5.—(Chart Va) Height and weight curves for Horace Mann School girls.

The 22 individuals in Charts XIIIa and XIVa are from the University of Chicago schools and from homes similar to those of the Francis W. Parker School, but they form part of a much larger body of students. In Chart XIIIa the individuals are taken at random, but in Chart XIVa an effort was made to find cases of arrested growth. The growth curves in height for both groups, like all the Horace Mann School children, show fewer individual fluctuations than those of the Parker School and, aside from No. 5 (Chart XIVa), there is a very close parallelism between the varying heights and the varying weights of the different individuals, i. e., the taller children are the heavier.

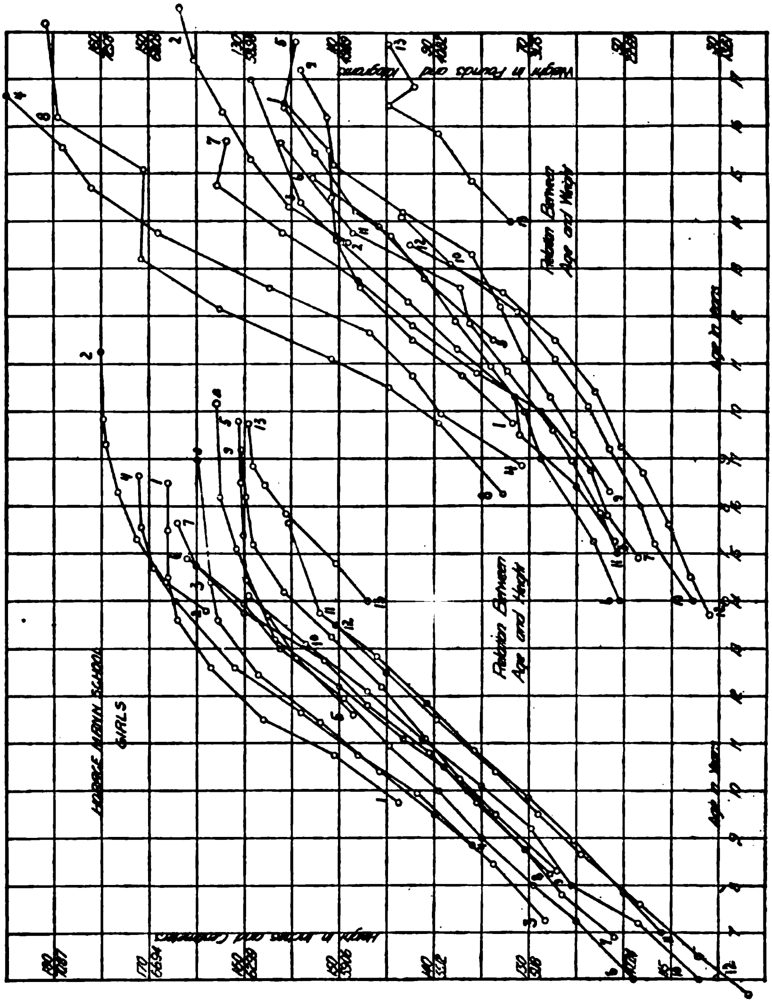


FIG. 6.—(Chart VIa) Height and weight curves for Horace Mann School girls.

No. 1 (Chart XIVa) is the tallest girl included in this study and her weight curve deviates from the general tendency in that its form is similar to the height curve. The per cent of increase in height increments over the initial heights for a given chronological age from 6 to 18 is so comparatively uniform for each individual that the growth curves may enable one, in the future, to prophesy with considerable accuracy how tall a child of normal growth will be at any subsequent age within the interim, providing his or her relation to a given median, or norm, be known.

The trend of the height curve, aside from the period just previous to the accelerated pubescent growth, tends toward convexity. If there is unusually rapid growth for the individual from 7 years to the beginning of adolescence, there is a decrease during adolescence, and there is frequently a reversion of the common rhythmic order.

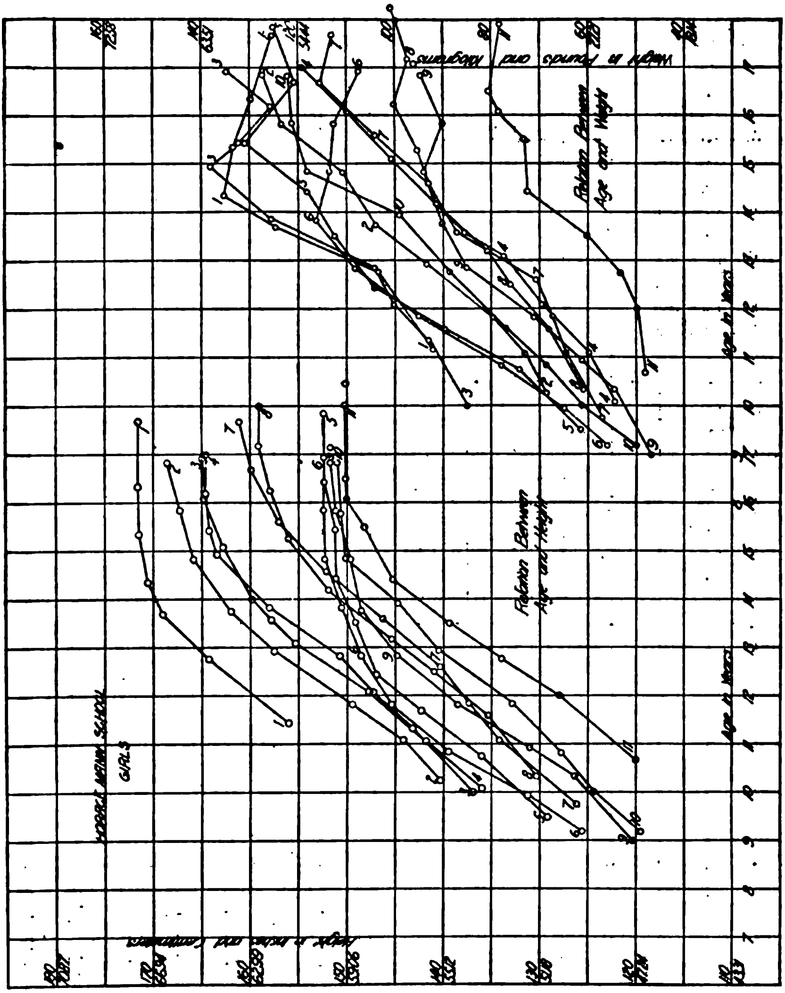


Fig. 7.—(Chart VIIa) Height and weight curves for Horace Mann School girls.

Of the 170 boys and girls whose height curves are plotted for the preadolescent and adolescent ages, a few show a regular uniform rate of increase at pubescence, a much larger number show an accelerated rate, and fewer show a decrease in gain.

The cases of marked arrest, or retardation, in growth in height with this group of children occur usually during the early adolescent period and persist through the period.

WEIGHT.

The individual weight curves have certain characteristics which are interestingly significant when compared with the height curves.

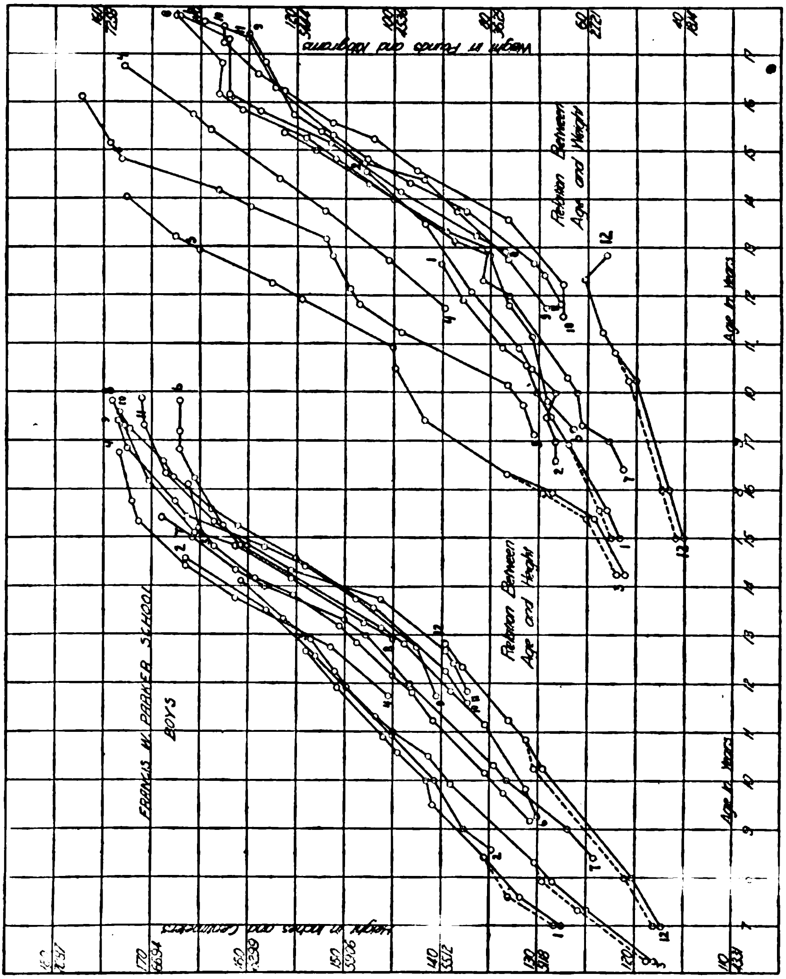


FIG. 8.—(Chart VIIIa) Height and weight curves for Francis W. Parker School boys.

With the exception of No. 9 (Chart Ia), who is heavier than the others for his height, the boys' heights and weights are as a rule relatively proportionate to each other. The five boys below median height (Nos. 10, 11, 12, 13, and 14 of the first chart) are also the five lightest, with the exception of No. 10, whose nutrition is poor. The boys hold the same relative positions in the series in reference to both height and ight.

Though there are more individual fluctuations in growth in weight than in height, there is also a wide range of individual differences, as shown by the fact that No. 2 of the first group at 14 years of age is 60½ pounds heavier than No. 14. The striking differences between the two series of curves are: The weight curves tend toward concavity and the height curves toward concavity just before the pubescent acceleration, and then both toward convexity; the height curves never fall below the previous measurement, except in a few instances for a millimeter or two, and the weight may go above or drop below the previous measurement. In several instances boys lost in weight, and these losses divert the curves from their relative positions within the group, which may later be regained.

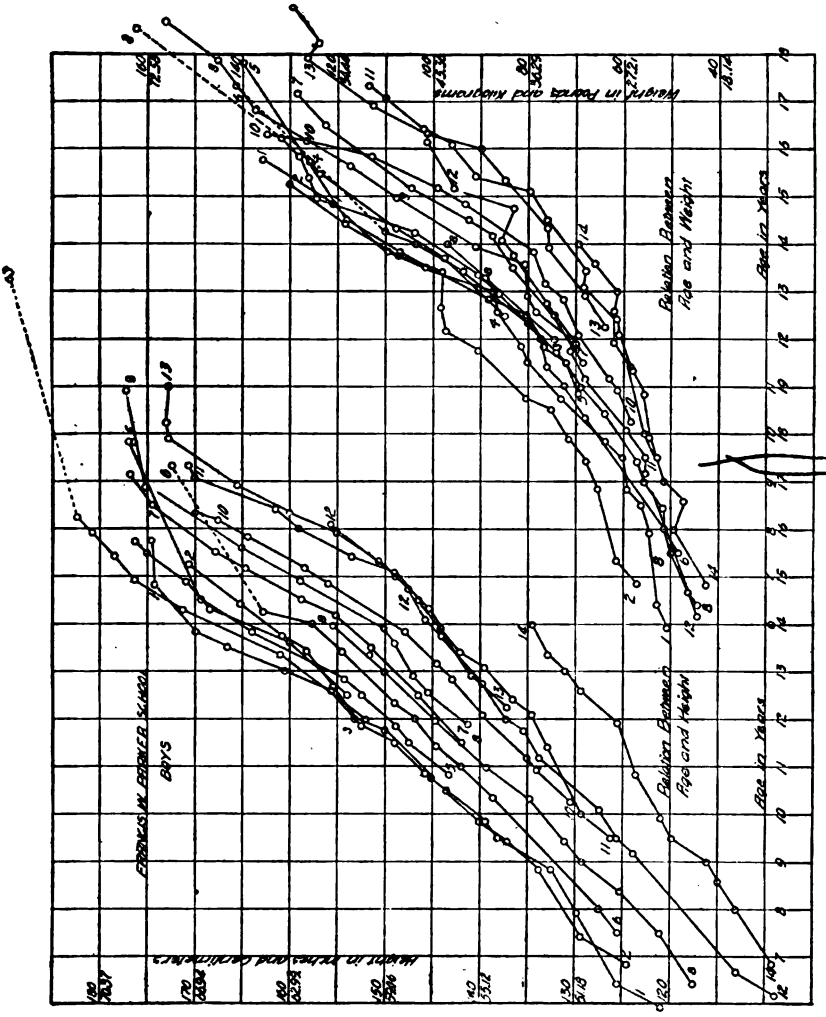


Fig. 9.—(Chart IXa) Height and weight curves for Francis W. Parker School boys.

The curves of weight show to a marked degree a decrease in relative increment from 6 to 11 or 13 years of age, the latter limit varying with the relative height and weight of the individual. After this there is a marked acceleration. The uniformity of increase in height and weight increments certainly tends, on the whole, to call attention to the value of the vigilant watching and remedial exercises on the part of the examiners in this school, and at the same time gives concrete evidence of the great value of physical examinations and medical inspection for growing children.

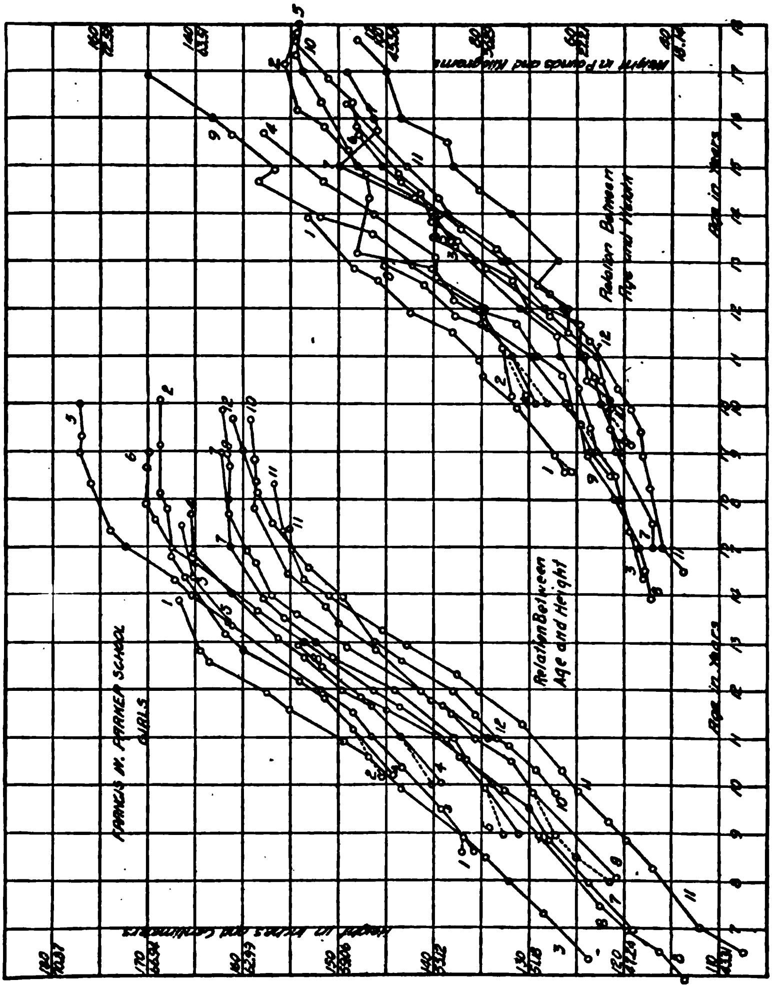


FIG. 10.—(Chart Xa) Height and weight curves for Francis W. Parker School girls.

Girls are relatively heavier than the boys, and the weight curves show less tendency toward concavity, with slightly more individual fluctuations. There are no cases of a loss of weight previous to 16 years of age; in many instances (Chart IVa, for example) the taller girls are as a rule heavier. In a general way each individual retains her relative position in regard to height. In Group V there are three cases of loss in weight after 17 years of age and two previous to this age. No. 7 diverts from this tendency of her group, being the heaviest after 8 years.

There is apparent confusion in the complexity of weight curves for Group VIIa, but if the curves of those whose growth in height was

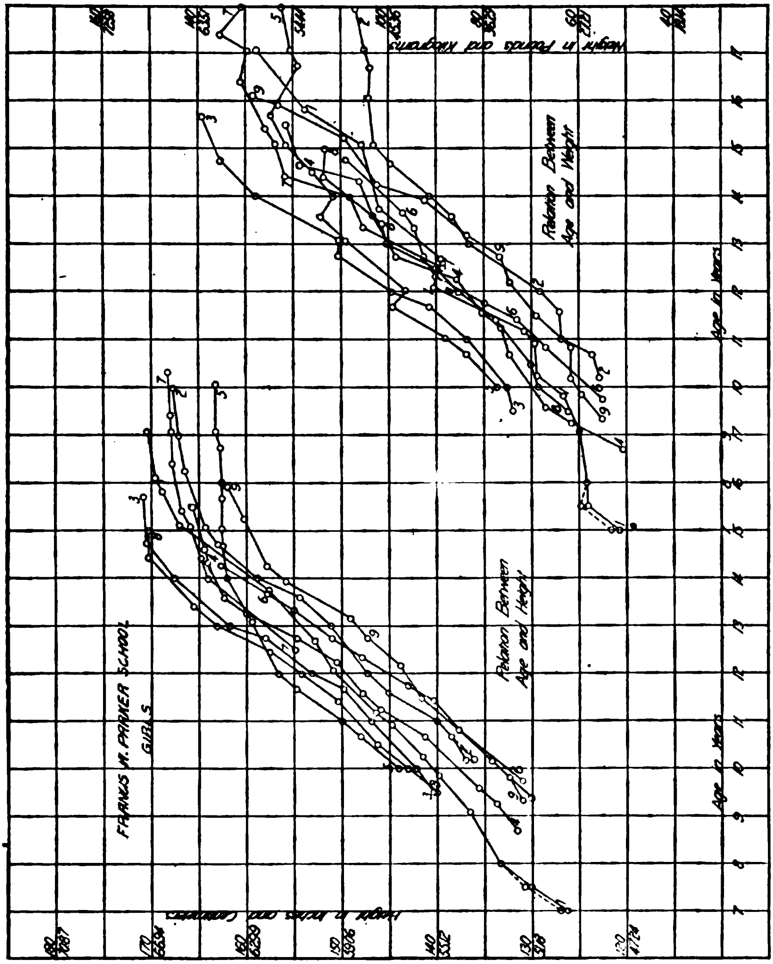


FIG. 11.—(Chart XIa) Height and weight curves for Francis W. Parker School girls.

arrested are eliminated, and allowance is made for a decrease for the last year of the period in this chart, the remaining curves tend to follow those of the other groups. The continued retardation in the curves in height is paralleled by a similar period of arrest in weight. The instability in growth in weight is represented by a mass of intersecting curves in Chart XIa. No. 5 loses in weight in a manner similar to the retardation of growth in height, but the loss in weight does not occur until a year and a half later than the loss of growth in height. In general, an arrest of growth in height after 15 is also accompanied in this group by a cessation of growth in weight, which is unusual. Some other unusual relationships between height and weight are illustrated in Chart XIIa; these are particularly evident in the case of No. 1, who, while fairly tall, is symmetrical and fat, with a marked deviation from any of the previous weight curves, and

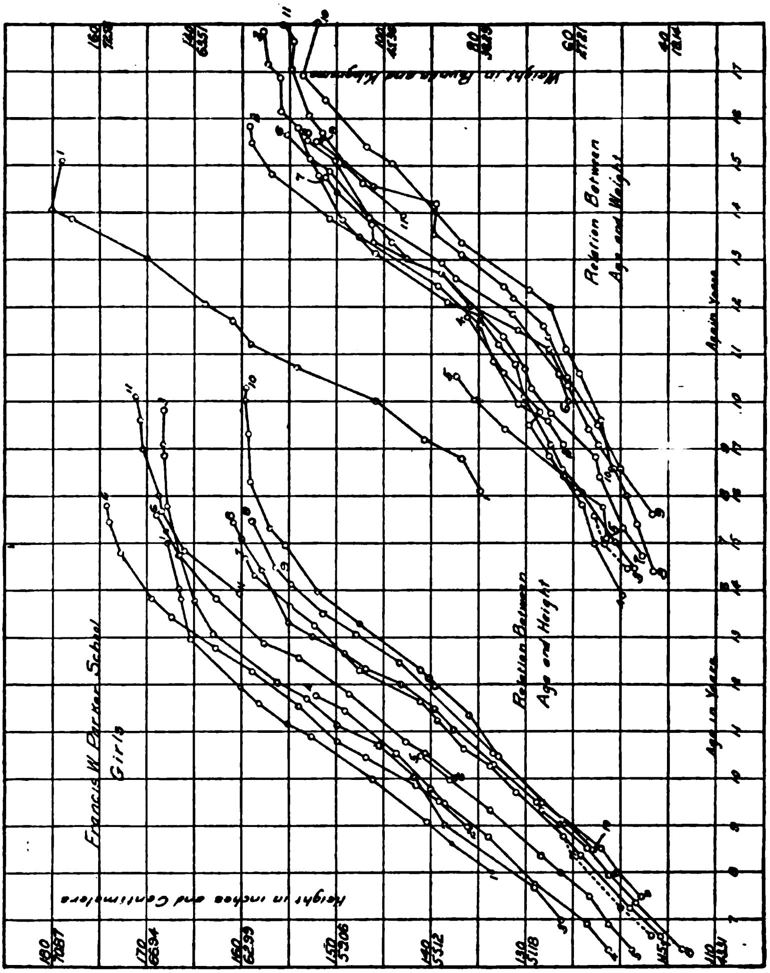


Fig. 12.—(Chart XIIa) Height and weight curves for Francis W. Parker School girls.

No. 5, who is also overweight, and illustrates the same type of deviation. Most of the other girls are under weight, but show no unusual tendencies. The weight curves of the very stout girls in this group are strikingly similar to those in the other charts.

The trend of the weight curves in contrast from the height curves is toward concavity, with more marked concavity (or loss of increments of gain between 8 and 13 years) for boys than for girls.

The weight curves are characterized by a period of rapid acceleration during adolescence, except in cases of marked arrest, which are usually accompanied by marked arrest in growth in height. There are very few curves of a uniform increment of growth during adolescence.

Marked arrests of growth in weight, like those of height, occur during the adolescent period.

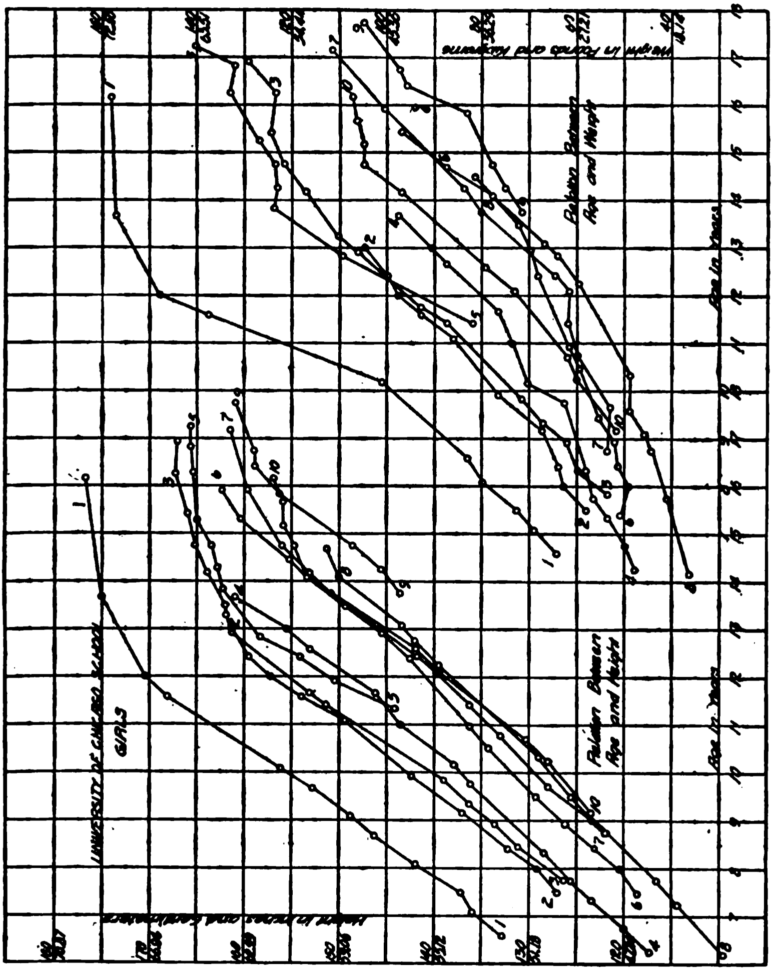


FIG. 13.—(Chart XIIIa) Height and weight curves for University of Chicago Elementary and High-school girls.

The heavier boys and girls are the taller boys and girls, and there is a close parallelism between the relative rank in height of a boy or girl and his or her relative weight within a group.

The boys and girls below median height have their periods of rapid pubescent acceleration in weight later than those above, since the same general principles of physiological age hold for weight as for height.

(b) LUNG CAPACITY.

It will be noted in the boys' lung capacity curves that No. 9, in the first chart, who is relatively heavier than the others for his height, also has more lung capacity. This is significant, since the other boys hold approximately their relative places for height, weight, and lung capacity. For example, in the third group (Chart IIIa) there are a number of short, light boys in the group, and, as would be expected, there are a number of boys with inferior lung capacity. The fluctuations in growth in height in the case of No. 11 are also apparent in the lung-capacity development. Like weight, lung capacity shows occasional losses, and the curves tend toward concavity, which shows the increments increase less from 9 to 13 than during any other period for boys. The rapid gains and losses at the beginning may

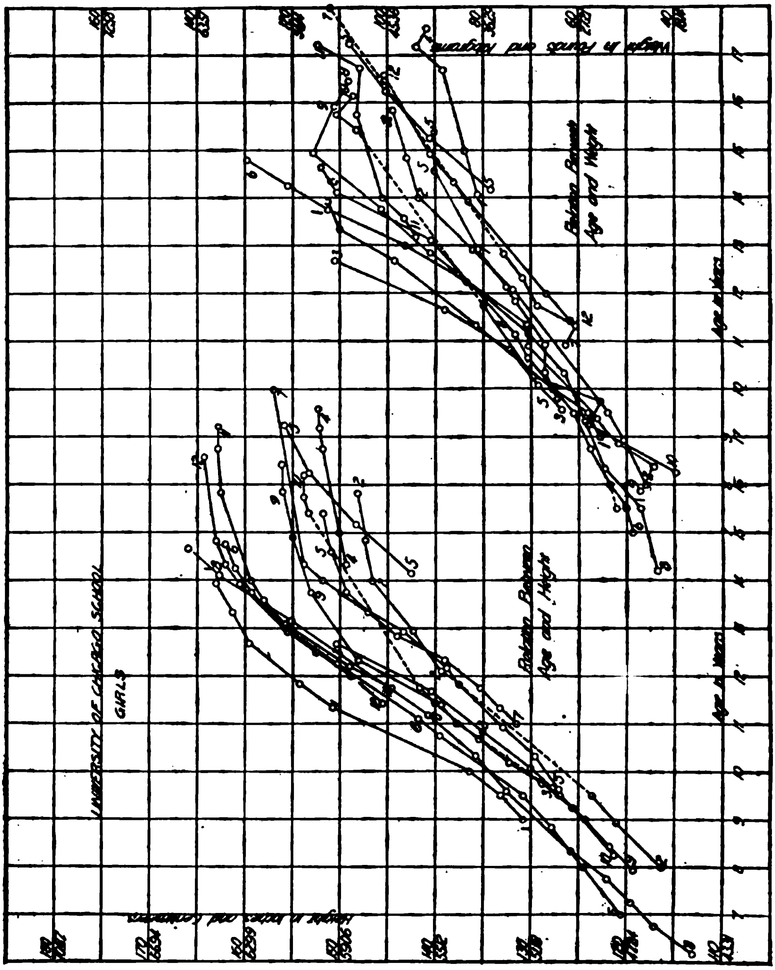


FIG. 14.—(Chart XIVa) Height and weight curves for University of Chicago Elementary and High-school girls.

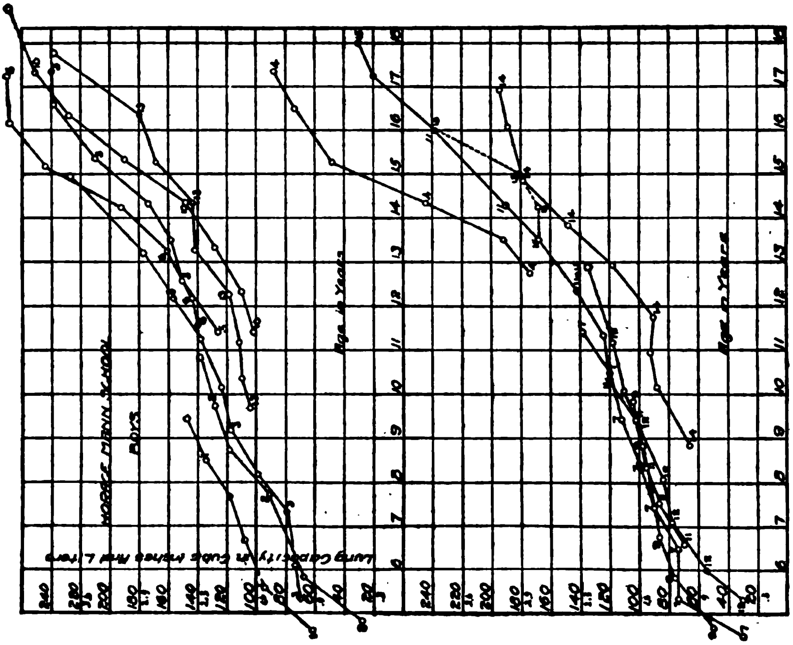


FIG. 16.—(Chart IIb) Lung-capacity curves for Horace Mann School boys.

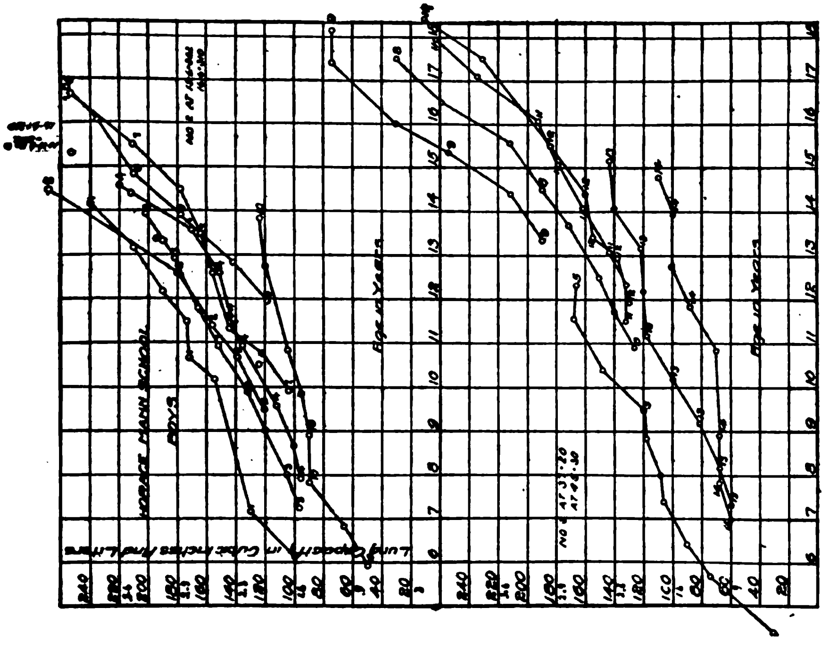


FIG. 15.—(Chart Ib) Lung-capacity curves for Horace Mann School boys.

be due in several instances to the new factor of voluntary control required for this measurement and the mental adjustments necessary to meet such a test. These curves, like the others, show comparatively few cases of crossing when the large numbers of possibilities are considered. The range of differences is not so marked as in height the curves are more closely grouped than those of weight. There is a close massing of the curves for the Francis W. Parker boys.

Among the girls some striking similarities to growth in height and weight may be noted in regard to the normal direction of lung capacity curves. For example, in Chart Va, No. 1 shows little or no acceleration at adolescence; the same is true for No. 9 in height and lung capacity; No. 5's curves are very similar, as also are those of Nos. 4 and 10. It is apparent the girls' lung capacity curves show less concavity or decrease in absolute increment between 9 and 14 than the boys. This may be explained on the basis that the girls are becoming superior to the boys in height and weight during this period, only to drop back later in height, weight, and lung capacity. The lung capacity curves of the girls differ in their general trend from those of the boys and follow the same tendency as the weight curves of the girls.

In Chart XIVb the same arrests in lung capacity are illustrated as in height and weight. This is particularly true of Nos. 4, 7, and 11, and also of No. 12, who is very light, but tall, and has an exceptionally small lung capacity. The lung capacity curves, like those of height and weight, are irregular, and are indicative of instability of uniform increase in development. The long interim between measurements is responsible in some instances for the crossing. In Chart VIIb there is a peculiar massing of curves, due to the arrest of Nos. 5, 6, 8, 10, and 11. No. 1's position may be due to some after effect of pneumonia. The close relation between weight and lung capacity is again illustrated in No. 1 of Chart XIIb, who is extraordinarily stout, with large lung capacity; No. 3 shows the same retardation in lung capacity as in height and weight.

While there are several cases of parallelism in relative positions in height, weight, and lung capacity, there are some interesting exceptions. In Chart IVb, Nos. 2, 6, and 8 are underweight and have less lung capacity than their heights would seem to justify. No. 8 has a poor health record, and the other cases would help to augment the suggestion previously made that there is a closer relationship between lung capacity and weight than with height. This is contrary to popular opinion, and will be discussed more in detail later. The girls are inferior to the boys in lung capacity in the later adolescent period, which may be explained to some extent on the basis of hygienic conditions and dress.

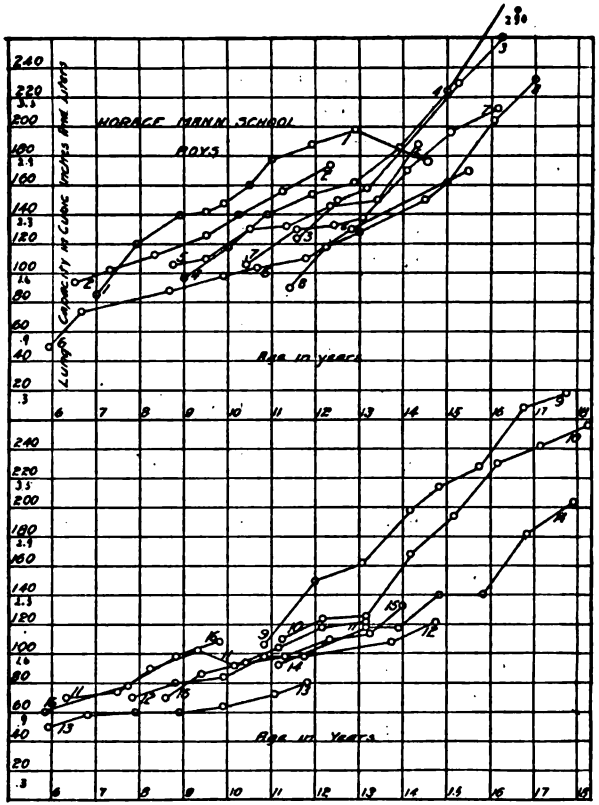


FIG. 17.—(Chart IIIb) Lung-capacity curves for Horace Mann School boys.

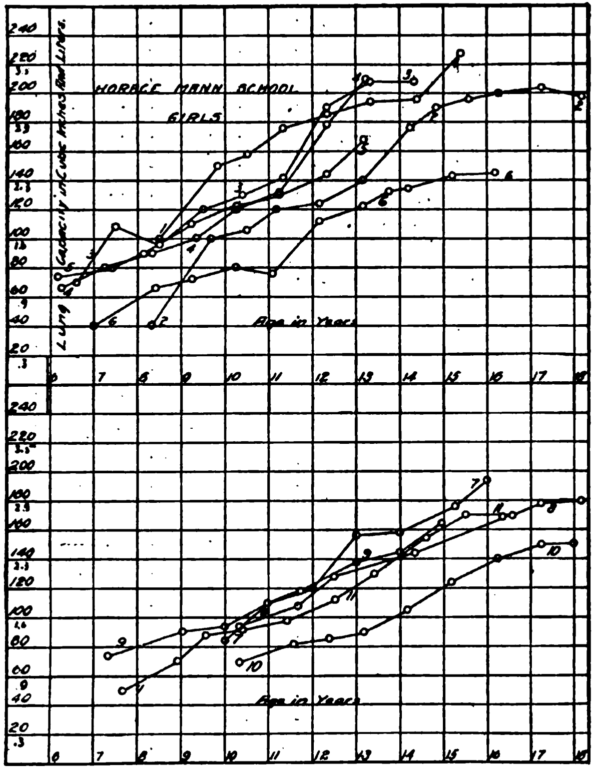


FIG. 18.—(Chart IVb) Lung-capacity curves for Horace Mann School girls.

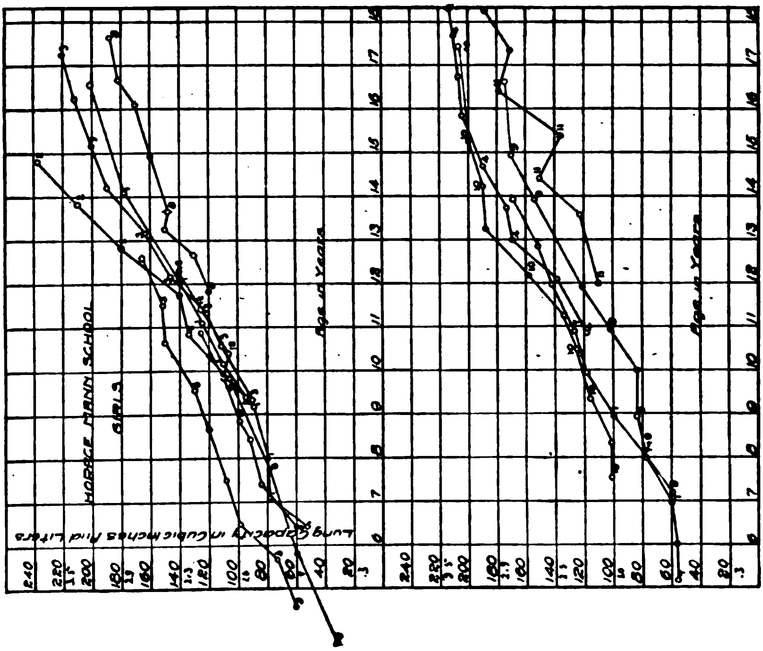


FIG. 19.—(Chart Vb) Lung-capacity curves for Horace Mann School girls.

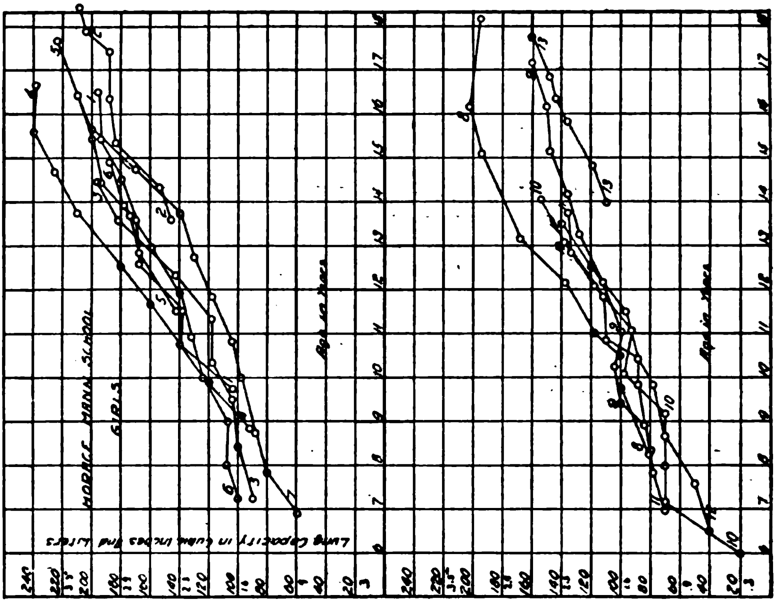


FIG. 20.—(Chart VIb) Lung-capacity curves for Horace Mann School girls.

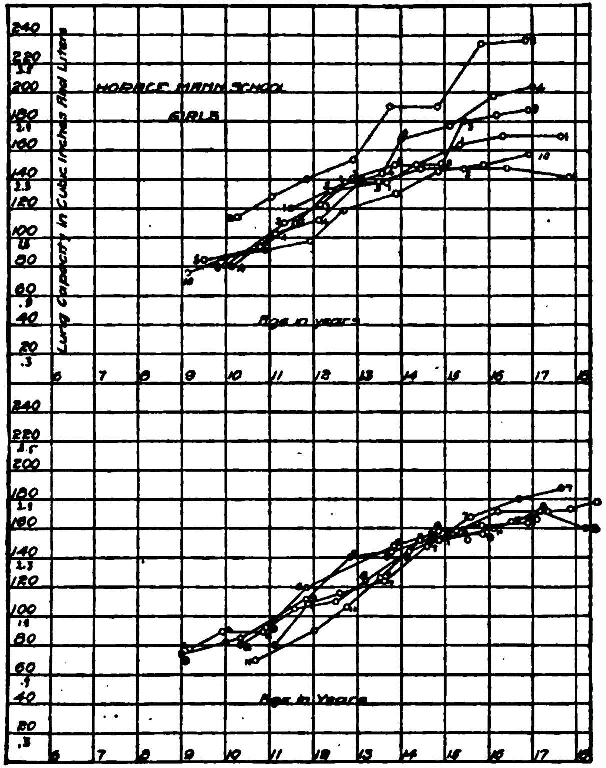


FIG. 21.—(Chart VIIb) Lung-capacity curves for Horace Mann School girls.

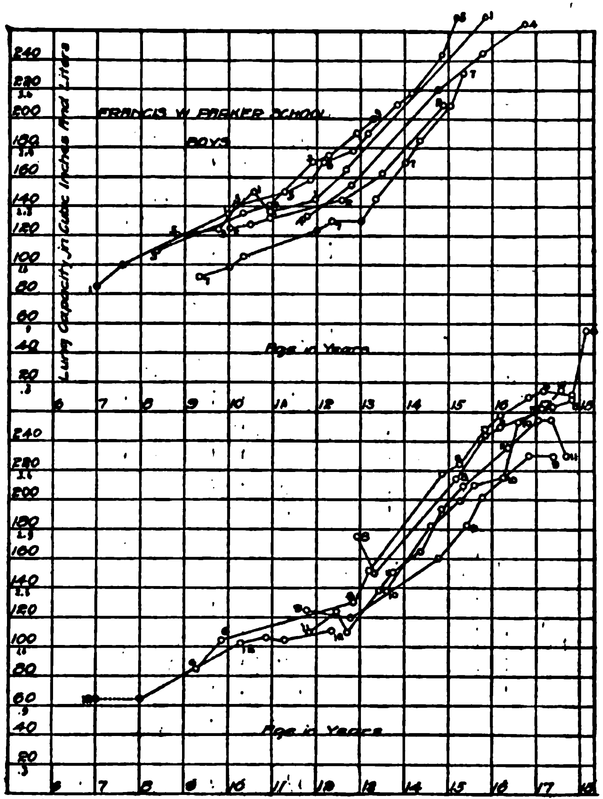


FIG. 22.—(Chart VIIIb) Lung-capacity curves for Francis W. Parker School boys.

The boys have greater lung capacity than the girls at all periods except between 13 and 14 years.

The annual increase in lung capacity is slightly less regular than that of weight, and the curves tend toward the same concave form.

The concavity of the lung-capacity curves, like those of weight, is more marked with boys than girls.

Marked arrests in height and weight are uniformly accompanied by arrest in growth of lung capacity.

There are a few cases of uniform increase in increments of growth in lung capacity during adolescence.

The boys and girls of greatest lung capacity are almost invariably those of greatest height and weight, and each frequently maintains his or her relative position within the group.

The boys and girls above and below median height differ in their periods of accelerated growth in lung capacity in a manner similar to the differences in height and weight.

9. THE RELATION OF PHYSICAL DEFECTS TO GROWTH.

It is not possible to discuss in detail in this bulletin the relations between physical defects, diseases, and nutrition, and growth in height, weight, and lung capacity, but the data, as far as available from the physicians' records, are included in order that comparisons and further conclusions may be made by those who wish to follow up these details. The aim here, as in all phases of this investigation, is to present the source material in such form that future inductive studies may be pursued by the writer or by others who wish to use the data.

In general, it may be stated that there are more marked relations between defects or diseases and growth in weight than in height, although the height is affected by conditions of long standing. For example, No. 1, Chart Ia, is the tallest individual in this group until 13 years of age, after which he gradually loses his relative position. Accelerated growth and resistance to disease go hand in hand. Adenoid growths materially affect physical development.

No. 10, Chart Ia, has the characteristic rhythms of growth in height and almost none in weight. The weight height and vital indices indicate subnormal nutrition. This is even more marked in the case of No. 14. A child may of course be short and light and still have normal growth in height and weight, providing the weight height relationship is normal.

Notes on the physical condition of individuals whose curves in height, weight, and lung capacity are given in Charts Ia and b.

(Those appearing in the group of 100 in Tables 21 and 22 are: 1—150; 3—147; 6—194; 7—196; 8—191 10—114; 11—170; 12—159; 13—111; 14—106.)

1. Health good at entrance; at 7 heart irregular and intermittent, cautioned with d to exercise (note rapid growth in height and weight); anemic at 8 (note drop

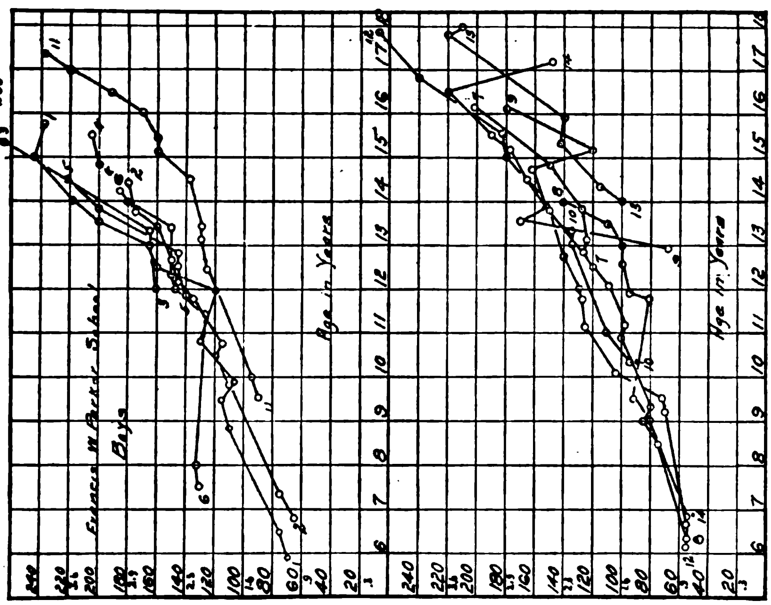


FIG. 23.—(Chart IXb) Lung capacity curves for Francis W. Parker School boys.

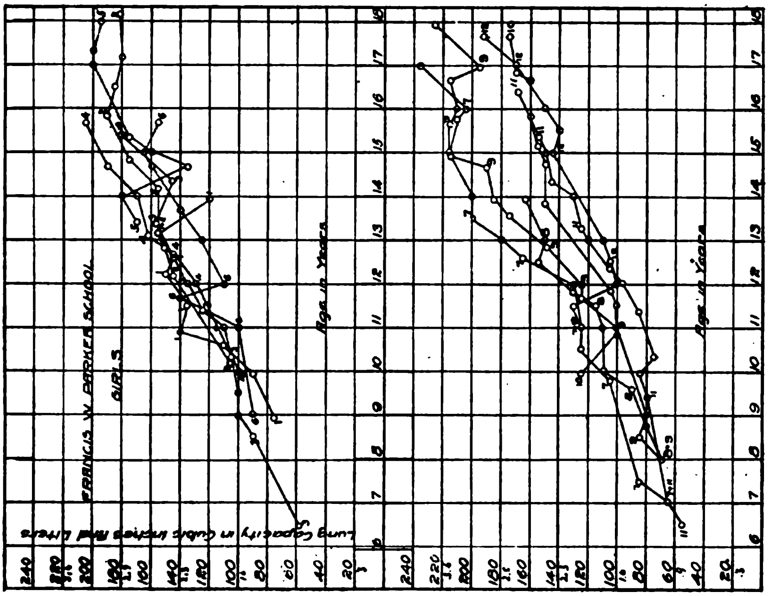


FIG. 24.—(Chart Xb) Lung capacity curves for Francis W. Parker School girls.

in weight curve); at 10 heart regular and normal; at 11 special shoes for flat feet, also corrective exercises; at 14 injured knee. Parents American.

2. During childhood had whooping cough, mumps, measles, scarlet fever, and inflammatory rheumatism; at 10½ heart was irregular and continued to remain slightly irregular. Mother American, father English.

3. Health good at entrance; slight hereditary tendency to nervousness; had measles between 6 and 7 and chicken pox and bronchial pneumonia between 7 and 8; just previous to measurements of 9 years was recovering from measles; at 10 tonsils slightly enlarged, remaining so until 11.

4. Health excellent at entrance, but had had whooping cough and measles; rhinosis at 9½ which continued until 11½ years, after which condition improved.

5. Health good at entrance, but had had measles at 3; at 5½ posture poor;[1] at 7½ posture poor; heart slightly irregular at 8; astigmatism; corrective work begun in gymnasium at 8½; bronchial cold at last measurement.

6. Condition good at entrance, but tendency to colds and had had whooping cough; at 14 condition good; shoulders round at 16; improved at 17.

7. Excellent health, but had had scarlet fever, complicated with mastoid operation; measles, chicken pox; adenoids removed (note rise in weight curve); condition good during remainder of the time. Mother American, father German.

8. Weak throat at 11; condition good at 14. Mother American, father English.

9. Health good at entrance, but had had scarlet fever, whooping cough, and malaria; at 14½ had malaria, flat feet, enlarged tonsils, and follicular conjunctivitis; at 15½ improvement; at 18 good, under occulist's care. Parents American.

10. At entrance had had measles and bronchitis; tendency to bronchitis; fair health, tires easily; poor nutrition, slight pigeon breast at 7; health better at 8, also eyes, which were weak; at 14 left eye injured.

11. Health generally good; eyes weak between 13 and 14; gave trouble between 16 and 17 Parents American.

12. At entrance had had whooping cough, chicken pox, scarlet fever, mumps; restless; at 13 had operation for appendicitis; at 15½ condition good, followed by bicycle accident.

13. Excellent health, but has had measles; nervous child; shoulders round; foreskin long, bad habits at 8; condition fair, but restless at 10; at 11 condition fair; posture poor at 13.

14. Health good on entering, but had had whooping cough; tendency to tonsillitis; at 8 had tonsils and adenoids removed; at 9 well until severe attack of tonsillitis; at 10 condition good, but foreskin inflamed; also at 11 and 12; nervous temperament; high arched palate.

[The health notes for the other individuals may be found in Section III, Statistical Material, pp. 118–124.]

10. WEIGHT-HEIGHT AND VITAL INDICES.

One of the most useful and most practical indices of growth is the weight-height coefficient, which expresses the comparative solidity or robustness of the individual, and, therefore, other things being equal, his general nutrition. The following table gives the weight-height and also the vital indices of the pupils whose heights, weights, and lung capacities are expressed by the curves given in Charts Ia and Ib to XIV, inclusive. The weight-height index is obtained by dividing the weight (in kilograms) by the height (in centimeters); this gives the fraction of a kilogram which the individual possesses in weight for

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[1] Whooping cough between 6 and 7 (slight depression in weight).

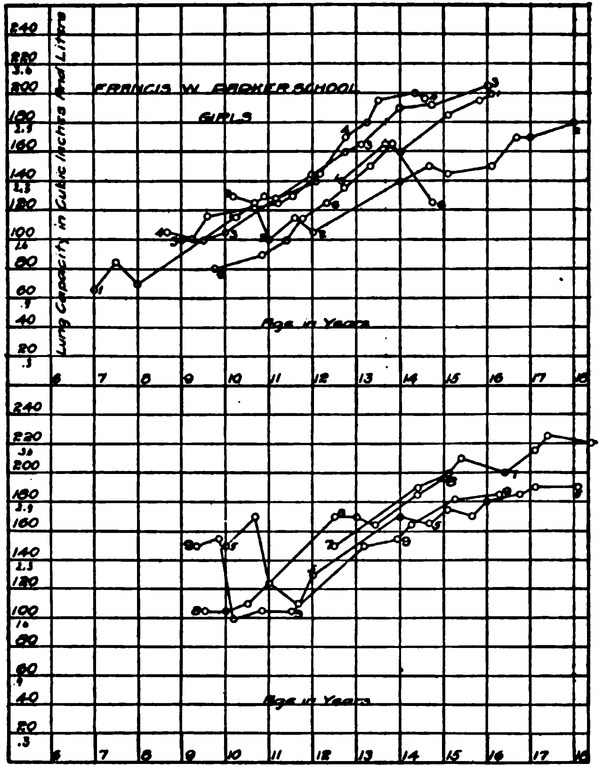

FIG. 25.—(Chart XIb) Lung capacity curves for Francis W. Parker School girls.

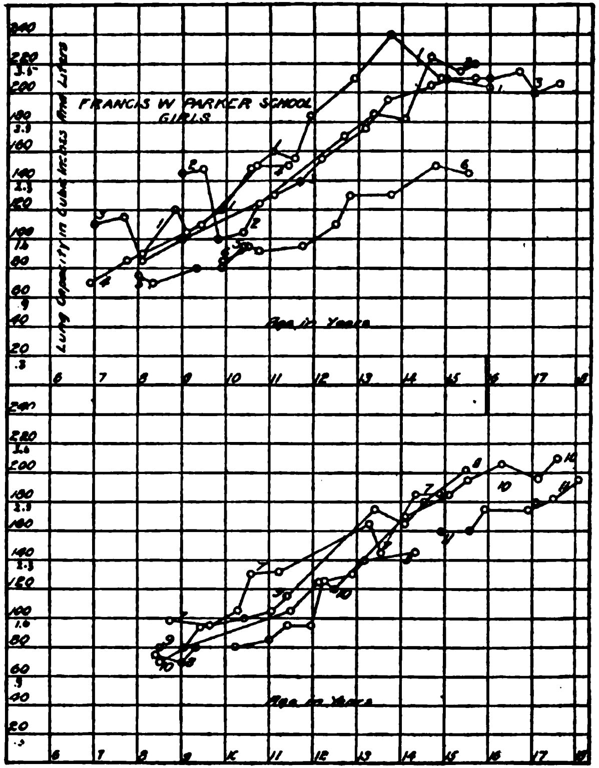

FIG. 26.—(Chart XIIb) Lung capacity curves for Francis W. Parker School girls.

each centimeter of height. The vital index is obtained by dividing the lung capacity (in liters) by the weight (in kilograms); this gives the fraction of a kiloliter which the individual possesses in lung capacity for each kilogram of weight.

The numbers at the top of this table refer to the successive measurements shown by the circles in Charts Ia and Ib and indicate the age in half-year periods; the numbers at the left in the vertical column refer to the individual curves as numbered on the charts. The upper row of figures in hundredths express in each case the weight-height index; the lower row in thousandths, the vital index.

The weight-height indices increase steadily in nearly all cases from 5½ to 18 years of age, which shows that weight increases more rapidly than height. The lowest ratio in this group of boys is 0.15 at 6 years and the highest 0.40 at 17½ years of age. There is little or no apparent difference, as a rule, between the tall boys and the short boys, except that the tall individuals have high indices early. This clearly substantiates the two important conclusions previously stated that the development in height and weight, as a rule, go hand in hand, and the second conclusion that any normal physiological change in the height or weight occurs earlier for tall children. For example, if we take the index 0.23 as representing a given physiological stage of development, it will be noted that the time shifts chronologically in a fairly uniform manner between 7 and 8 years of age with No. 1 to 14½ years for No. 14.

TABLE 9.—*Weight-height and vital indices at ages 5½ to 17½ years for Charts Ia and Ib (pp. 38, 53)*[1].

[Figures in hundredths express weight-height index; those in thousandths the vital index.]

No. of curve.[2]	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½
1	0.19	0.21 .058		0.25 061		0.23				0.25 .065	0.25	0.26 .072		0.27 .070		0.29 .071		0.34 .066							
2									0.26 .050		.27 .055		0.28 .056		0.32 .057				0.36 .068		0.35 .076		0.37 .084		
3		.20			0.22 .055	.22 .058		0.23 .060		.26 .056		.26 .062		.27 .063		.30 0.60		.32 .060							
4						.17 .068		.20 .060	.22 .058		.24 .058	.23 .064	.25 .062		.28 .060		0.29 .055		.33 .061						
5	.18 .057		0.18 .067		.20 .071	.20 .070	0.20 .071		.22 .064		.22 .074		.24 .076		.24 .073										
6													.23	.23 .055		.26 .056		.29 .060		0.33 .061		0.37 .058		0.37 .060	
7							.23			.27 .046	.27 .051		.30 .054		.31 .054		.33 .052		.37 .050		.36 .056		.40 .059		
8										.22		.23 .063		.24 .064	.25 .065			.28 .064	.30 .063		.35 .057		.36 .067		0.37 .071
9																	.33 .061		.32 .068		.37 .065	.36 .060			.40 .075
10		.15 .049		.16 .049		.18 .068		.18 .060		.19 .060		.21 .056				.24 .054		.26 .050							
11											.24		.25 .061		.25 .059	.26 .066		.28 .063		.29 .064		.27 .071		.35 .064	.37 .066
12														.25 .063		.26 .061	.27 .060		.28 .063		.30 .066				.34 .068
13					.20 .042	.21 .044		.19 .056		.20 .065		.20 .072		.21 .066		.23 .062		.23 .068		.24 .064					
14				.15 .058		.20 .047		.22 .044				.19 .047		.19 .056		.21 .056		.22 .051		.23 .046					

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[1] The indices for the other individuals are given in Section III, Statistical Material, pp. 125–133.

[2] See Chart I *a* (p. 38) and Chart I *b*, p. 53.

The gain in lung capacity or vital index also increases with age and in general follows the tendencies just indicated for the weight-height indices.

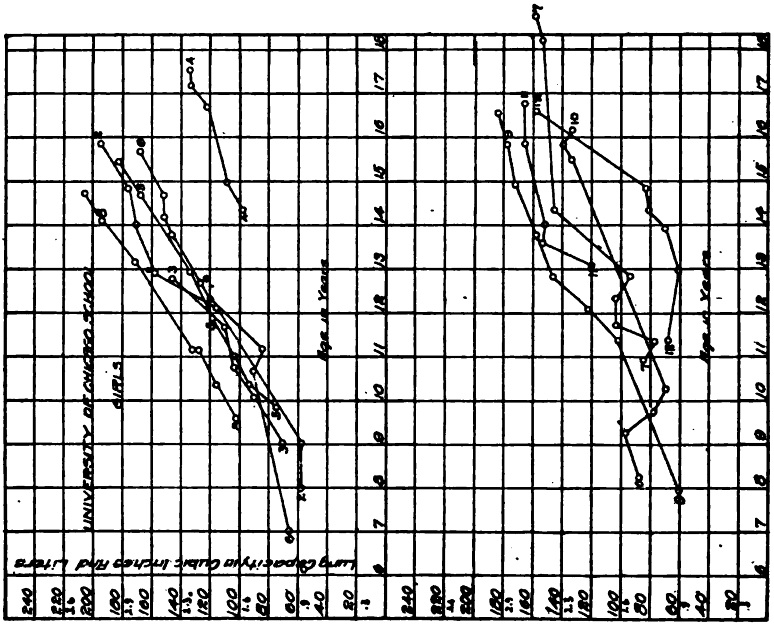

FIG. 28.—(Chart XIVb) Lung capacity curves for University of Chicago elementary and high schools.

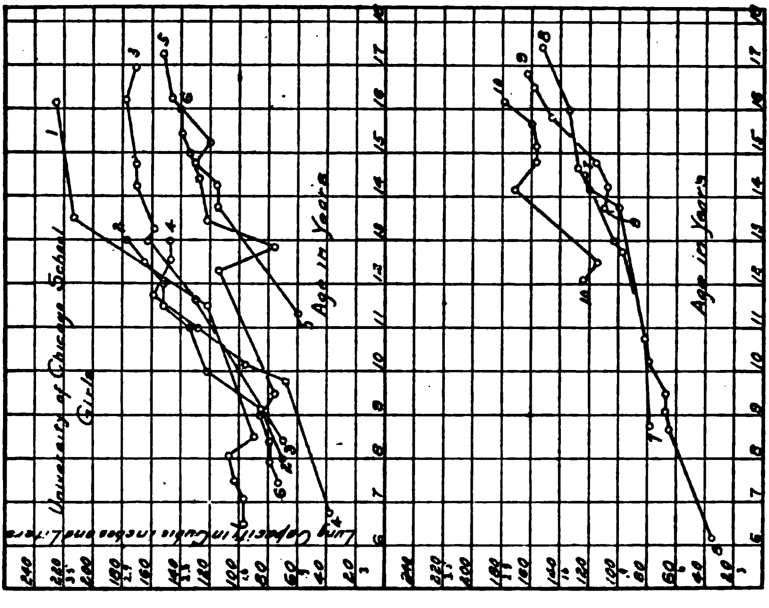

FIG. 27.—(Chart XIIIb) Lung capacity curves for University of Chicago elementary and high schools.

The following table gives the averages of all the weight-height and vital indices for the boys and the girls from the two groups of schools:

TABLE 10.—*Average weight-height and vital indices, for ages 5½ to 17½ years—Horace Mann, F. W. Parker, and Chicago schools.*

AVERAGE WEIGHT-HEIGHT INDICES.

	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½
Boys.																									
Horace Mann....	0.178	0.176	0.188	0.187	0.195	0.195	0.204	0.202	0.201	0.218	0.230	0.224	0.232	0.234	0.253	0.259	0.273	0.269	0.302	0.274	0.328	0.310	0.351	0.334	0.423
F. W. Parker....	......	.185	.192	.185	.198	.192	.204	.206	.211	.223	.232	.227	.240	.246	.246	.256	.264	.222	.287	.302	.317	.323	.322	.340	.344
Girls.																									
Horace Mann....	.156	.174	.187	.191	.193	.195	.208	.187	.225	.216	.226	.240	.255	.245	.274	.278	.298	.302	.310	.323	.337	.325	.342	.314	.364
F. W. Parker....	......	.170	.163	.177	.173	.182	.180	.191	.200	.217	.206	.216	.226	.273	.254	.261	.270	.280	.293	.295	.316	.311	.318	.317	.318
Chicago..........	......	.160	.200	.205	.194	.195	.188	.198	.200	.232	.224	.224	.245	.248	.243	.254	.286	.279	.252	.254	.313	.305	.312	.307	.312

AVERAGE VITAL INDICES.

	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½
Boys.																									
Horace Mann....	0.0516	0.0518	0.0588	0.0564	0.0588	0.0653	0.0622	0.0578	0.0629	0.0581	0.0612	0.0610	0.0616	0.0621	0.0613	0.0596	0.0613	0.0610	0.0622	0.0652	0.0639	0.0668	0.0681	0.0655	0.0730
F. W. Parker....	......	.0625	.0780	.0625	.0560	.0715	.0510	.0536	.0494	.0575	.0602	.0602	.0557	.0631	.0606	.0606	.0607	.0591	.0630	.0620	.0634	.0612	.0618	.0630	.0700
Girls.																									
Horace Mann....	.0500	.0390	.0463	.0434	.0837	.0498	.0520	.0507	.0567	.0530	.0532	.0538	.0533	.0531	.0542	.0548	.0539	.0530	.0539	.0526	.0535	.0548	.0539	.0580	.0535
F. W. Parker....	......	......	.0490	.0496	.0615	.0436	.0615	.0537	.0568	.0609	.0636	.0598	.0587	.0575	.0569	.0575	.0594	.0568	.0648	.0562	.0543	.0577	.0567	.0560	.0581
Chicago..........	......	.0350	.0480	.0450	.0575	.0440	.0467	.0523	.0462	.0490	.0516	.0575	.0467	.0527	.0540	.0553	.0518	.0577	.0477	.0504	.0485	.0563	.0528	.0520	.0502

It will be noted that the averages destroy the individual characteristics of the relation of the growth in weight and height, since the fluctuations due to physiological maturity counteract each other in a manner that neutralizes rhythmic tendencies. It may be observed that the weight with boys in proportion to the height increases just over 100 per cent from 5½ to 17½ years; the increase with the girls is slightly less than that of the boys. It is very difficult to observe nodes in the relationship of the two aspects of growth, but apparently there is an increase at 10½ and another at 14½ years of age. This substantiates the previous conclusion that the pubescent acceleration in weight precedes that of height, and that weight continues to increase much more rapidly than height after 14½ years for boys. These two nodes may be noted to appear approximately at 10 and 13½ for the girls.

There is less increase in relative growth in weight in proportion to lung capacity than in the case of height. For boys the increase from 5½ to 17½ is from 30 to 40 per cent when averages are taken, and for girls there is less increase. These average results, as in the case of the weight indices, are not representative of individual development, since they are averages.

11. THE CORRELATION OF GROWTH IN HEIGHT AND WEIGHT TO SEXUAL DEVELOPMENT.

Selecting the individual growth curves of the girls whose first menstruation has been carefully recorded in years, months, and days, and placing them in a chart (No. XVa), it is at once apparent there is a direct correlation between physiological age as evidenced by height and weight and the advent of menstrual functions. The tallest and heaviest girl (No. 1, Chart IVa) in the group from the three schools began her pubescent acceleration in height with the usual accompanying changes in weight at about 10 years. This is unusually early, but is accounted for by the previously established conclusion that her height, weight, and healthy constitution indicated an early physiological development. As indicated by the cross line in the chart, the menses appeared when she reached 12 years of age.

The second and third girls (No. 3, Chart VIa, and No. 1, Chart Va) are each tall and heavy. The second, or heavier one, had her first menstruation as early as 11 years, and the former at 11½. Both of these girls were apparently in good health at the time; both had previously had adenoids removed.

The fourth girl (No. 3, Chart VIa), who is anemic and neither as tall nor as heavy as either of the others, but above median height, began menstruation at 13 years 3 months. The fifth girl (No. 2, Chart XIIIa), who is above median height and weight, began menstruation at 12 years 5 months; the sixth (No. 3, XIIIa), also above median height, at 13 years 3 months; the seventh (No. 4, XIIIa) at 13 years 8 months; the eighth (No. 5, XIIIa) at 15 years 3 months 17 days; the ninth (No. 12, XIVa) at 14 years; the tenth (No. 6, XIVa) at 13 years 9 months; the eleventh (No. 9, XIVa) at 13 years 9 months; the twelfth (No. 9, XIIIa) at 16 years 7 months; the thirteenth (No. 10, IVa) at 16 years; the fourteenth (No. 14, XIVa) at 15 years.

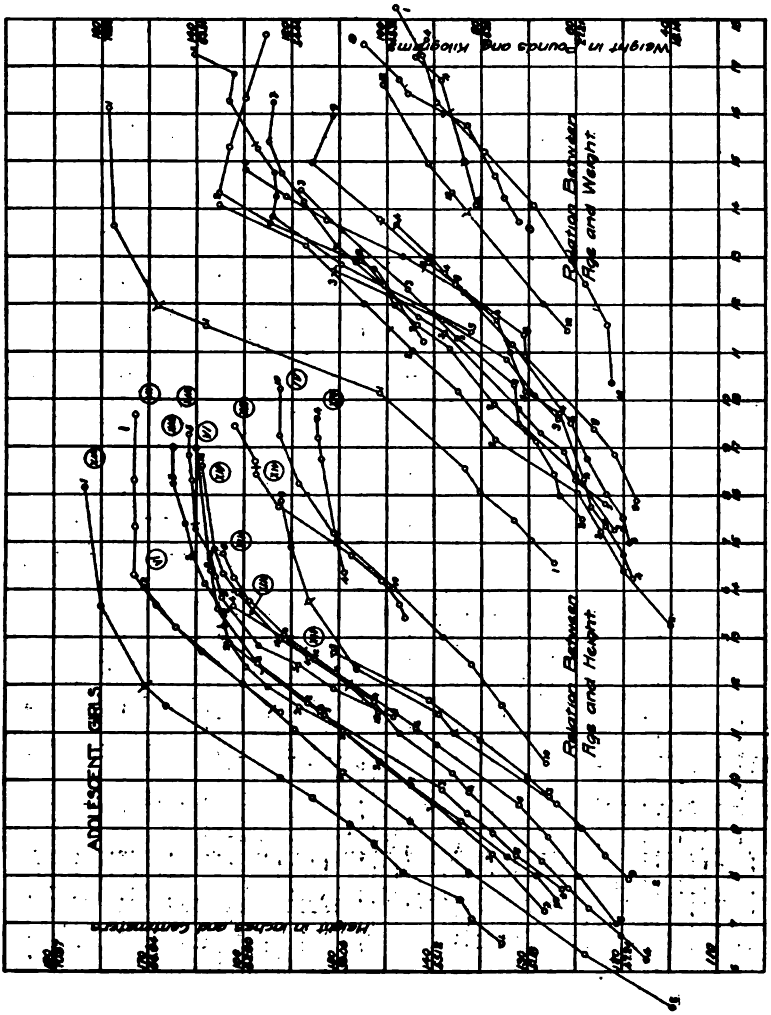

FIG. 29.—(Chart XVa) Periods of maturation for girls.

Height and weight, therefore, it would appear, offer excellent objective criteria for teachers and parents for determining the advent of menstruation as a factor in pubescent development and the onset of maturity. If the girl is tall, healthy, and well nourished, this physical stage may be reached as early as 11 years in a normal girl; if tall, but under weight, it may be delayed; if very short and markedly light, it may be delayed until 16 years of age.

These conditions have wide educational application both in physical training and school work. They emphasize the fact that the smaller child should be treated as a younger person who has not had the physical development and the accompanying mental disturbances and experiences which would seem to be indicated by her chronological age in years, and which, too often, has been used as a basis of classification, training, and social activities.

The prevalent idea that menstruation should occur between the ages of 14 and 16 is also untenable, since the extremes in these cases represent normal healthy girls of different physiological development.

Since writing the above conclusions, I have had access to Weissenberg's *Das Wachstum des Menschen*, and he substantiates my observations with a limited number made by him. He finds the girls who have had their first menstruation before 13 years of age taller, as a rule, than those who have not reached this stage in their physiological development before 15 years of age. His results are (p. 200):

Age of menstruation.

First menstruation on or before 13 years of age.		First menstruation not having occurred before 15 years of age.
Height.	Age at first menstruation.	Height.
Centimeters.	*Years.*	*Centimeters.*
152.0	13.0	142
144.0	12.0	148
157.0	11.0	148
154.0	12.0	150
157.0	11.0	148
140.0	13.0	145
147.0	13.0	158
154.5	12.5	149
145.5	12.5	151
....	....	151
....	....	148

It is at once apparent the first group of girls are above normal height, which Weissenberg finds to be 144.5 centimeters for this age, while the others are comparatively short, since the norm for this age is 150.5 centimeters.

Weissenberg also studied the advent of first menstruation for 1,273 Jews and 768 Russians, and found the average age for the Jews 14 years 2 months and for the Russians 14 years 11 months. Jamasaki found the age to be 15 for Japanese girls and 17 for Chinese, on the average.

These differences in ages are no doubt greatly influenced by racial and climatic conditions, but the conclusions of this investigation, so far as I am able to determine, hold true for individuals within a race and under similar environmental conditions, i. e., the taller, heavier girls, with extensive lung capacity, mature physiologically earlier than those below the median or average in these respects.

Other signs or criteria of physiological age are the early appearance of the teeth and the development of the bones of the wrist, changes of the voice and pubescent changes during adolescence. The appearance of first menstruation is one of the most significant signs.

12. CONCLUSIONS.

Growth in height.—That these boys and girls form a select group and that school medical inspection, directed play, and physical training are important educational agencies is shown by the fact that on the average these children are taller, heavier, and have better lung capacity than any group in a series of 112, extending from Quetelet's first study in 1836 to 1913 and comprising over 1,000,000 individuals.

The boys are taller than the girls from 6 to 11 years of age, and the girls then become taller and remain so until 14½, after which the boys are again taller. The widest range of individual differences for boys and girls is during adolescence.

The per cent of increase in height increments over the initial heights for a given chronological age from 6 to 18 is so comparatively uniform in many cases that the growth curves may enable us to prophesy with considerable accuracy how tall a child of normal growth should be at any subsequent age within the interim, providing his relation to a given median or norm be known.

The trend of the height curve, aside from the period just previous to the accelerated pubescent growth, tends toward convexity. The decrease in increments of growth in height just before the acceleration is more marked with boys than with girls. If the increase before adolescence is uniform, this uniformity tends to persist throughout adolescence; if there is unusually rapid growth for the individual from 7 years to the beginning of adolescence, there is a decrease during adolescence, and there is a reversion of the common rhythmic order.

Of the boys and girls whose height curves are plotted for the preadolescent and adolescent ages, a few show a regular uniform rate of increase at pubescence, more show an accelerated rate, and fewer show a decrease in gain.

The cases of marked arrest in growth in height with this group of children occur during the early adolescent period and persist through the period.

Growth in height is affected by the inception and removal of adenoids, but the common children's diseases apparently have little effect on increase in stature.

The average increments of growth of those above and below the median height, the individual increments of growth in the four tables of boys and girls, the individual growth curves, the advent of maturity with the girls, show that the children above median height between the chronological ages of 6 and 18 grow in stature and in physiological maturity in advance of those below the median height, and they may be physiologically from 1 to 4 or even 5 years older than those below the median height. Those above the median height have their characteristic pubescent changes and accelerations earlier than those below; there is a relative shifting of the accelerated period according to the individual's relative height.

For the girls included there is a direct correlation between the advent of first menstruation and different heights of the individuals. The taller girls mature earlier than the ones below the median.

Growth in weight.—The boys are heavier than the girls from 6 to 12 years of age, and the girls then become heavier and remain so until 16, after which the boys surpass them.

In many cases it would be possible to prophesy the approximate weight at any later age within the interim from 6 to 18 years of age. However, the weight curves show more marked individual variations and fluctuations than the height and in some cases show actual loss of weight.

The trend of the weight curves, differing from the height curves, is toward concavity, with more marked concavity (or loss of increments of gain between 8 and 13 years) for boys than girls.

The weight curves are characterized by a period of rapid acceleration during adolescence, except in cases of marked arrest, which are usually accompanied by marked arrest in growth in height. There are very few curves of a uniform increment of growth during adolescence.

Marked arrests of growth in weight for these children, like those of height, occur during the adolescent period.

Growth in weight is materially affected by the inception and removal of adenoids and the inception of or recovery from disease.

The heavier boys and girls are the taller boys and girls, and there is a fair parallelism between the relative rank in height of a boy or girl and his or her relative weight within a group.

The boys and girls below median height have their periods of rapid pubescent acceleration in weight later than those above, since the same general principles of physiological age hold for weight as for height as a rule.

Growth in lung capacity.—The boys have greater lung capacity on the average than the girls for all periods except between 13 and 14 years of age.

The annual increase in lung capacity is slightly less regular than that of weight, and the curves tend toward the same concave form. The individual fluctuations are more like those of weight than height.

The concavity of the lung capacity curves, like those of weight, is more marked with boys than girls.

Marked arrests in height and weight are uniformly accompanied by arrest in growth of lung capacity.

There are a few cases of uniform increase in increments of growth in lung capacity during adolescence.

Growth in lung capacity is materially affected by the inception of and recovery from disease.

The boys and girls with greatest lung capacity are almost invariably those of greatest height and weight, and each maintains his or her relative position within the group as a rule.

The boys and girls above and below median height differ in their periods of accelerated growth in lung capacity in a manner similar to the differences in height and weight.

(B) AGE, GRADE, AND SCHOOL STANDING.

1. CURRICULA AND METHODS OF GRADING.

The subjects of instruction in the Horace Mann School, in the elementary work, include arithmetic, art, composition, French, geography, grammar, history, literature, manual training, nature study, penmanship, reading, science, and spelling; and the high-school subjects are algebra, biology, chemistry, Cicero, civics, English, French, German, geometry, history, Latin prose, manual training, physics, trigonometry, and Virgil. The Francis W. Parker School includes English, French, German, handwork, history, mathematics, reading, science, spelling in the elementary school, and Latin in addition in the high school. Both schools have 12 grades above the kindergarten. The Horace Mann School marks begin in the third grade and the Francis W. Parker School marks as low, in some instances, as the first grade.

With the exception of a very few individuals the school marks were recorded in the letters A, B, C, D, E, and F, and for these are substituted the following equivalents given on the report card: A = 97½; B = 90; C = 80; D = 72½; E = 65; F = 30. In the few instances where the numbers 1, 2, 3, 4, and 5 were used the following equivalents, recommended by the head of the school, are used: 1 = 95; 2 = 80; 3 = 50; 4 = 30.

The record card is shown on the next page. The marks for music and application are not included in this study.

[Record card.]

HORACE MANN ELEMENTARY SCHOOL.

Name.. Grade........................

190 -191	English				Mathematics	Nature study	Geography	History	Penmanship	Manual training	Art	Music	Application	No. of absences	No. of tardinesses	Remarks
	Reading and literature	Spelling	Grammar	Composition												
Dec. 1																
Feb. 1																
Apr. 1																
June 1																

[Reverse side.]

A—95–100. B—85–95. C—75–85. D—70–75. E—60–70. F—0–60.

In order that a pupil may be promoted he must secure the mark D or above on his last report, and on at least two others, with no mark below E.

Parents or guardians are earnestly requested to examine this report, sign below and return.

Principal.

Dec. 1	
Feb. 1	
Apr. 1	
June 1	

2. THE DATA.

The average school mark for the 42 Horace Mann School boys is 81.9 per cent and is based on 8,625 final marks; the average mark for the 46 Horace Mann School girls is 85.9 per cent, based on 10,063 final marks; the average mark for the 26 Francis W. Parker School boys is 77.7 per cent, based on 1,601 final marks; and the average mark for the 21 Francis W. Parker School girls is 80.9 per cent, based on 1,393 final marks. There are fewer subjects included in the Francis W. Parker reports, and the marks reported are yearly marks, in place of quarterly marks. This, however, should not make much material difference in the results, since the teachers computed their own term averages. The study thus includes 10,226 final term marks for 68 boys and 11,456 final term marks for 67 girls, or 21,682 final term marks for 135 individuals. No marks for a longer period than four years were available from the University of Chicago elementary and high schools, and therefore they were omitted.

3. METHODS OF TABULATION.

The following table gives the average school standing, the number of marks considered, and the grades for each year for the 14 individuals whose growth curves in height, weight, and lung capacity are plotted in Chart Ic. The Arabic numbers from 1 to 14, inclusive, refer to the number of the individual curves in the chart; the ages in years and months refer to the individual's age in June, when the first average school standing was computed, and all the subsequent average marks are for yearly intervals from this age; the average per cent is the average of all the subjects for the four terms for each year from September to June; the number of cases includes the number of marks giving the average mark for each subject for the four terms; the small figures above and to the right of the averages indicate the school grade, the high-school work beginning at the eighth grade unless otherwise indicated. The general averages and total cases are for the entire scholastic life included in this study. The 10 additional tables which follow are uniform in construction with Table 11.

The marks for No. 1 begin at 10 years 9 months of age in the fourth grade, with a yearly average of 81 per cent for 37 marks. One year later this boy advanced to the fifth grade and received an average of 82 per cent for 44 term marks, and so on until the eighth grade was completed. The final average school standing for this first boy, based on 187 marks, is 85 per cent.

The final scholastic standing of No. 2 is 80 per cent, based on 252 marks. This boy was absent from school in his fourteenth year, but returned and continued the work with the class the following year and graduated at 18 years. It should be noted that No. 9 was absent from school during the fourteenth and No. 12 during the seventeenth year, which delayed their advance to the next grade for one year.

It is important when interpreting these tables to keep in mind that the averages in the elementary grades are based on a larger number of subjects than those in the higher grades, and that in some instances where the number of marks is small the child was absent for part of the year, as indicated in the footnote. Assuming as a basis for normal progress that a child of 12 years of age should be in the sixth grade and one 16 years of age in the tenth grade, it will be noted that Nos. 1 and 14 are retarded one year; Nos. 11 and 13, two years; and No. 9 becomes retarded one year at 14, and No. 12 one year at 17. Nos. 4, 5, 6, and 10 are one year in advance of their grade. While the chronological age is not the most rational basis of grading, judging from what has been learned from the previous data included in this investigation, it is the basis on which these schools have in the main been graded, where no systematic allowances were made for the physiological age or for differences between boys and girls. It would appear that such a standard is applicable to these schools as indicated by their curricula and methods of promotion, although more attention is given to individual differences than in the average school.

TABLE 11.—*School standing (for Chart Ic. Horace Mann boys—Average mark, grade, age, and number of cases).*[1]

No. of curve.	Age in years and months.[2]	Age in years.																										General average.	Total cases.
		8		9		10		11		12		13		14		15		16		17		18		19		20			
		Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.		
1	10–9							81^{4}	37	82^{5}	44	91^{6}	43	84^{7}	43	85^{8}	20											85	187
2	10–2					85^{4}	37	83^{5}	40	86^{6}	39	77^{7}	48			80^{9}	28	79^{10}	20	75^{11}	24	75^{12}	16					80	252
3	8–6			84^{3}	39	89^{4}	37	87^{5}	44	87^{6}	48	82^{7}	42	78^{8}	24	84^{9}	20											84	254
4	9–3			85^{4}	41	85^{5}	47	90^{6}	22	89^{7}	47	80^{8}	28	75^{9}	25	74^{10}	24	67^{11}	6									81	240
5	8–0	82^{3}	40	80^{4}	39	83^{5}	40	81^{6}	43																			82	162
6	10–6							84^{6}	24	74^{7}	44	66^{8}	16	73^{9}	16	73^{10}	12	67^{11}	20	71^{12}	28	65^{12}	27					72	187
7	10–2					82^{4}	36	88^{5}	40	84^{6}	39	86^{7}	48	86^{8}	20	81^{9}	20	86^{10}	23	83^{11}	17							85	243
8	11–2							88^{5}	48	87^{6}	43	76^{7}	41	77^{8}	24	80^{9}	24	78^{10}	16	73^{11}	16	76^{12}	16					79	228
9	12–8													85^{7}	47	82^{8}	28	70^{9}	15	66^{10}	24	57^{12}	20	78^{12}	18			73	152
10	8–5	88^{3}	16	78^{4}	36	78^{5}	44	82^{6}	44	78^{7}	43	76^{8}	20															80	203
11	10–9							90^{3}	40	87^{4}	26	92^{5}	44	90^{6}	43	89^{7}	48	83^{8}	27	83^{9}	16	80^{10}	20	66^{11}	18	74^{12}	24	83	306
12	13–2											85^{7}	21	84^{8}	20	87^{9}	24	85^{10}	28			78^{11}	24	86^{12}	20			84	98
13	9–9					79^{3}	29	80^{3}	16	75^{4}	38	72^{5}	44	83^{6}	43	82^{7}	43	78^{8}	24									78	237
14	10–5							84^{4}	38	81^{5}	24	87^{6}	45	87^{7}	38	78^{8}	20	75^{9}	18									82	183

[1] The tables for Charts IIc to XIc may be found in Section III, Statistical Material, pp. 134–138.

[2] Age when marks began.

SCHOOL PROGRESS IN THE HORACE MANN SCHOOL.

The average mark is 81.9 for all the Horace Mann School boys included in the tables, and the curves which follow express the individual averages in the table. This average is based on 8,625 final marks for this group of 42 boys. The median, or middlemost mark, for the group falls between 81 and 82 per cent, and therefore the average may be assumed as a norm for a basis of comparison with the height, weight, and lung capacity norms. The grade norm has been established on the basis of age and grade, assuming a boy of 12 years of age should be in the sixth grade and a boy of 16 years of age should be in the tenth grade. The two variables in the distribution of marks and grades make it extremely difficult to establish one norm of school progress. This norm may be illustrated best perhaps through graphs, and a series of charts accompanies each of the tables on age, grade, and school standing.

It is at once apparent that there are 5 boys in Table 11, Ic, who are above the average school mark, or norm (81–82 per cent), for their group, and all of these boys except one are retarded by grade. There are 6 boys below the norm, and the 3 who were irregular in attendance are retarded by grade. In Table 24, IIc, there are 6 boys above the norm in mark; 2 of these are retarded by grade and 1 accelerated by grade. In the second group 4 boys fall below 81 per cent and 3 are retarded by grade and 1 accelerated by grade. The irregular attendance is equally distributed between those above and those below normal mark and normal grade. In the third group (Table 24, IIIc) 3 boys are above the average or normal mark, and 1 of these is accelerated by grade. Eight boys are below the norm in mark, and 3 of these are retarded by grade.

Among the Horace Mann School girls the marks are much higher; the median and average both lying between 84 and 85 per cent. In the first group (Table 24, IVc) there are 3 girls above the norm in mark and these are in normal grade. There are 4 below the norm in mark, and 2 of these are retarded by grade and 1 accelerated two grades. In the second group (Table 24, Vc) 3 girls are above the norm in mark, and 2 of these are retarded by grade; there are 8 below the norm, and 2 of these are retarded by grade and 2 accelerated by grade. In the third group (Table 24, VIc) there are 4 girls above the norm in mark and 7 below the norm, of whom 3 are retarded by grade. The last group of Horace Mann girls (Table 24, VIIc) contains 3 above the norm, of whom 2 are retarded by grade and 2 below the norm who are also retarded by grade.

There is a higher average by grade and by mark for the girls than for the boys, and there is more irregular attendance among the girls, which has a retarding influence both as to grade and mark when compared with the other girls whose attendance is irregular.

THE FRANCIS W. PARKER SCHOOL.

The average marks for the Parker School are below those of the Horace Mann for both boys and girls. In the first group of boys (Table 24, VIIIc) there are 5 boys above the norm (77–78 per cent), and 1 of these is accelerated by grade. There are 5 below the norm in mark, and 2 are retarded by grade. In the second group (Table 24, IXc) 10 boys are above the norm in mark, and 2 of these are retarded by grade. There are in this group 4 below the norm in mark, and 1 is accelerated by grade and 2 are retarded by grade.

The average mark of the girls for this school is 80.9 per cent, and the median is close to this. In the first group (Table 24, Xc) 8 girls are above the median in marks, and 3 of these are retarded by grade. Among the 3 below the norm in mark, 1 is retarded by grade. In the second group (Table 24, IIc) 5 are above the norm in mark, and 4 of these are accelerated by grade. Of the 4 below the norm in mark, 3 are retarded by grade.

Notes on the school standing of individuals whose marks and grades appear in Table 11 and Chart Ic.

1. Left school at the end of first year of high school.

2. Out of school one year and returned in second year of high school; remained four years with low marks; graduated.

3. Good work in elementary school; conditioned in Latin and French first year of high school (eighth grade); did not take full work second year and withdrew at end of term.

4. Out of school first two terms in sixth grade; conditioned in Latin and German during ninth; promoted to tenth; absent much in second term of eleventh; withdrew.

6. Entered beginning of third term in sixth grade; conditioned in arithmetic, grammar, French, during seventh; in biology during eighth; in Latin during ninth; in English during tenth; in Latin, French, chemistry, geometry, during eleventh; graduated after two years in twelfth.

7. Graduated.

8. Conditioned in algebra and French during ninth grade; in algebra in eleventh; graduated from twelfth.

9. Conditioned in Latin during eighth grade; in English and Greek during ninth; failed to graduate.

10. Entered third grade but did not take full work; inattentive during seventh; withdrew at end of eighth.

11. Absent during fourth term of fourth grade; conditioned in Latin, chemistry, algebra, and geometry after much absence during third term of eleventh; graduated at end of twelfth.

12. Entered seventh grade but extended absence during second and third terms; withdrew from school for one year at end of tenth; conditioned in Latin during eleventh; graduated.

13. Repeated part of third-grade work; conditioned in arithmetic during fourth; in English during fifth; improving steadily; still in school.

14. Absent during third and fourth terms of fifth grade; conditioned in Latin and history during ninth; still in school.

[The notes on school standing for the other individuals may be found in section III. Statistical material, pp. 139–142.]

4. CHARTS OF SCHOOL STANDING.

Expressing these tables in school standing in graphic form where 20 millimeters in the horizontal equals one year in age and 30 millimeters in the vertical equals one school grade, the two variables, age and school grade, may be expressed in the form of a continuous line. A third variable, or the average mark for each grade, may also be expressed, assuming the first 6 millimeters in the vertical within a grade to represent a standing between 50 and 60 per cent, the second

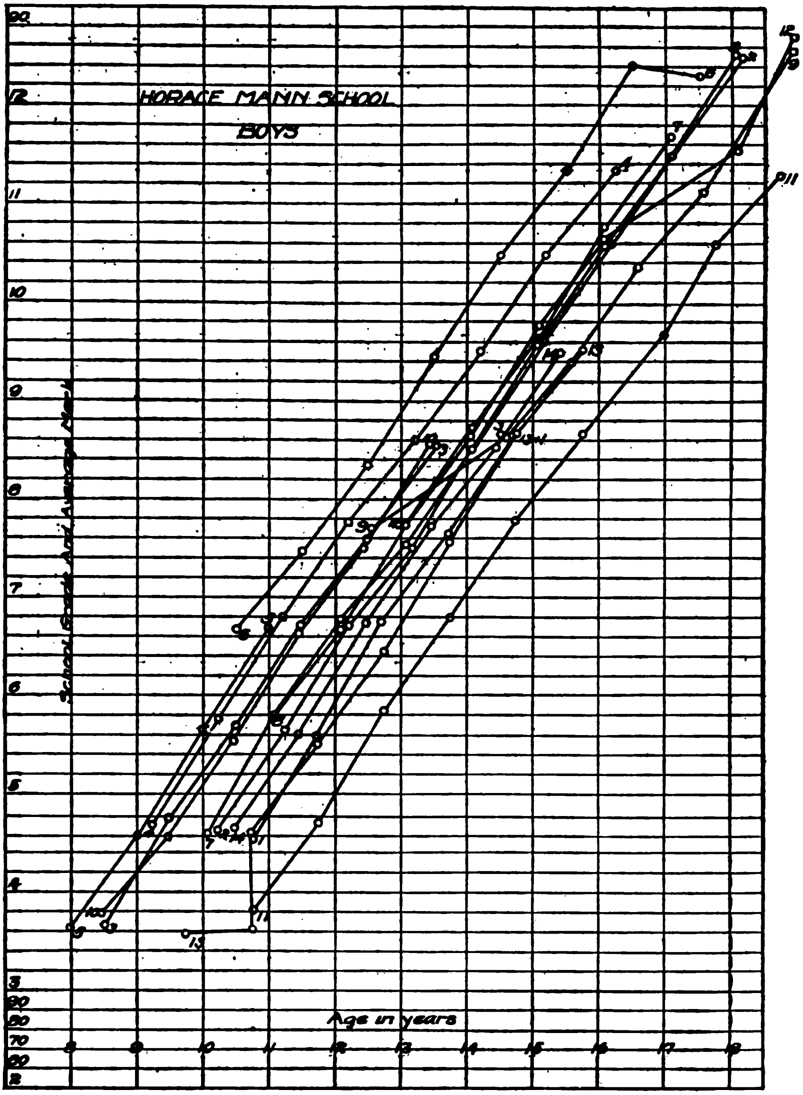

FIG. 30.—(Chart Ic) School-standing curves for Horace Mann School boys.

6 millimeters, between 60 and 70 per cent; the third, between 70 and 80 per cent; the fourth, between 80 and 90 per cent; and the fifth, between 90 and 100 per cent. Thus it will be noted in the chart that the uppermost curve represents the most precocious child and the lowest curve the most retarded from standpoint of age and grade.

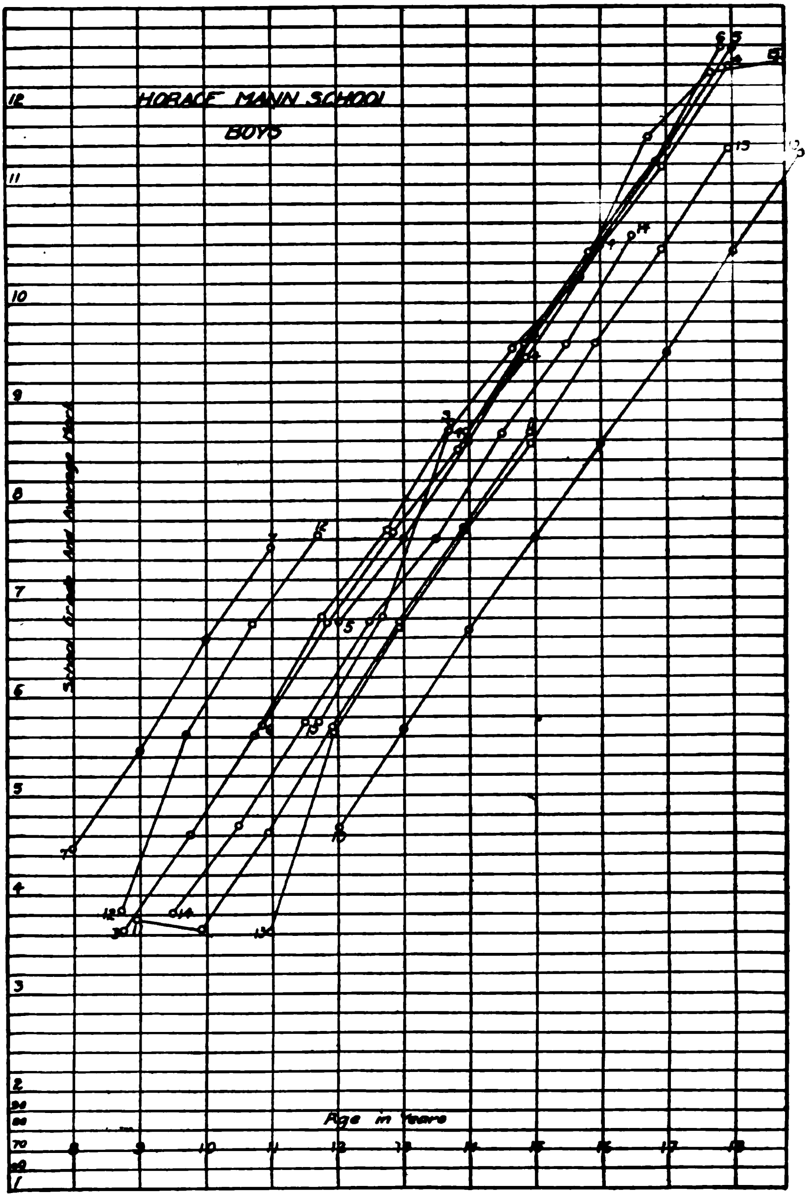

FIG. 31.—(Chart IIc) School-standing curves for Horace Mann School boys.

No. 6 is the most precocious in Chart Ic from the standpoint of age until he reaches 16½ years, and No. 11 the most retarded throughout his school life. On the contrary, comparing the average marks within the grade, No. 11 has higher marks than No. 6, as may be seen by noting the height of the circles in each grade.

It is at once apparent that 3 of these 14 boys in the first group lost a grade during the periods included. In two cases this was due to absence from school for a year, in the other case to the gradual lowering of the average mark of a boy who was being promoted in advance of his age on low grades. The nine additional charts which follow are uniform in construction with Chart Ic.

5. CONCLUSIONS.

In these schools where there is careful grading, the widest range of individual differences for the 135 pupils is four years in any one grade, with uniformly a wider range for boys than for girls.

If 12 years of age is taken as normal age for the sixth grade and 16 years for the tenth grade, there are in this group of 58 boys and 57 girls 27 boys and 26 girls retarded for one year or more during the school course and 13 boys and 11 girls accelerated for one year or more.

Girls maintain a higher school standing than boys; there are also more repeaters among the boys; and fewer cases of "skipping" a grade. In the fourth and fifth grades the boys and girls are approximately of the same age, but in the last year of high school the boys are older on the average.

There are only 9 instances of boys dropping back a grade and 4 instances with the girls; there are 4 cases of boys skipping a grade and 8 cases with girls. These are confined to the Horace Mann School.

Pupils who are relatively poor in the first few grades are relatively poor in the upper grades; that is, poor marks in the early school course are indicative of low standing throughout the school course. Boys and girls of normal school age or under maintain a better school standing both as to grades and marks than those over age for grade.

The age of entrance and the grade entered after 6 or 7 years determines the age for completing the school. With few exceptions these children progress through the elementary school at the rate of one grade per year, regardless of the chronological age at entrance.

There are waves or nodes in the marks from year to year for each individual, the most prominent drops coming at the entrance to the high school and in the fourth and fifth grades.

(C) THE RELATION OF PHYSICAL GROWTH TO SCHOOL STANDING.

1. SCHOOL STANDING AND GROWTH IN TWO ELEMENTARY SCHOOLS.

We now see the fundamental questions are: How do children progress through school? How do children mature physiologically during their school life? What is the relation between these two aspects of development when both are studied consecutively throughout the elementary school?

It must be recognized that since we are investigating the school standing age and since promotions and school efficiency are based on marks, these records must be taken at their face value, because they represent school practice and because they offer tangible criteria of the efficiency of the individuals of the school.

Each school has 12 grades above the kindergarten. The departmental method of instruction is more or less in vogue in all grades; and the same teachers, in some instances, have marked the pupils in their respective studies for several years. The teachers are among the best trained in America and the pupils are given a great deal of individual attention.

A more careful study of individual marks reveals that there are waves or nodes in the marks from year to year for each individual. The two most prominent drops are at the entrance of high school and in the fourth and fifth grades. The lower averages are most marked in the transition to the high-school grades, where the number of subjects also decreases. In these schools the best marks are found in the sixth and seventh grades for boys and girls, and during these grades the greatest number of subjects are included.

TABLE 12a.—*Average marks and average number of subjects for pupils in the elementary school, based on quarterly term marks.*

HORACE MANN SCHOOL.

	Grades.																Total average elementary school.
	1		2		3		4		5		6		7		8		
	Average marks.	Subjects.	Average marks.	Subjects.	Average marks.	Subjects.	Average marks.	Subjects.	Average marks.	Subjects.	Average marks.	Subjects.	Average marks.	Subjects.	Average marks.	Subjects.	
Boys....	......	....	....	....	84.6	34	81.9	36	82.6	55	85.5	46	83.3	44	80.3	22	83.7
Girls.....	......	....	....	....	90.0	34	87.2	39	85.0	45	89.0	44	87.4	46	85.4	22	87.9

FRANCIS W. PARKER SCHOOL.

	Grade 1, Average marks.	Grade 1, Subjects.	Grade 2, Average marks.	Grade 2, Subjects.	Grade 3, Average marks.	Grade 3, Subjects.	Grade 4, Average marks.	Grade 4, Subjects.	Grade 5, Average marks.	Grade 5, Subjects.	Grade 6, Average marks.	Grade 6, Subjects.	Grade 7, Average marks.	Grade 7, Subjects.	Grade 8, Average marks.	Grade 8, Subjects.	Total average elementary school.
Boys....	75.5	8	71.4	8	74.0	8	75.0	8	75.0	8	76.2	8	77.6	8	77.3	8	75.2
Girls.....	84.8	8	89.8	8	84.2	8	83.9	8	84.0	8	84.9	8	84.5	8	83.4	8	84.8

The fact that marks are lower during the fourth and fifth grades is significant. The reasons for the lower averages may be gleaned from each pupil's marks in each subject for each period and from the growth curves.

The variability of marks and the changing distribution in their ranking show that many pupils are not doing the kind of work given them in some subjects during these intermediate grades. What these subjects are for the Horace Mann School, and how they change from grade to grade, is shown in the following table, which gives the summaries of the marks that are very poor, poor, or only fair.

TABLE 12b.—*Number of pupils in each study in the various grades doing only fair or mediocre work.*

BOYS.

Grades, and number of pupils in grade.	III-19.	IV-30.	V-39.	VI-38.	VII-38.
Art	7	10	11	4	7
Composition	6	15	9	7	14
French and German	0	0	0	0	12
Grammar	0	2	0	8	19
Geography	1	8	1	7	9
History	8	4	5	5	11
Language	2	0	5	0	0
Literature	2	7	3	1	0
Manual training	7	10	11	1	0
Mathematics	10	20	10	10	17
Nature study	1	0	2	0	5
Penmanship	5	19	20	13	14
Reading	3	7	7	2	5
Spelling	6	13	10	6	13

GIRLS.

Grades, and number of pupils in grade.	III-27.	IV-36.	V-37.	VI-38.	VII-38.
Art	4	8	11	1	2
Composition	3	4	6	1	3
French and German	0	0	0	0	8
Grammar	0	2	3	0	0
Geography	1	11	7	0	8
History	0	8	5	1	9
Literature	1	3	5	1	4
Manual training	2	4	6	1	3
Mathematics	0	12	12	5	10
Nature study	2	0	5	1	3
Penmanship	1	9	7	2	0
Reading	6	10	5	0	2
Spelling	4	5	6	1	3

The very poor marks for the boys are: In the third grade, history 7, arithmetic 3, spelling 3; in the fourth grade, mathematics 10, penmanship 9, spelling 6; in the fifth grade, penmanship 9, mathematics 4, history 4; in the sixth grade, history 3, mathematics 3, penmanship 2; in the seventh grade, spelling 7, penmanship 6, mathematics 5.

For the girls the very poor marks are: In the third grade, spelling 2; in the fourth grade, mathematics 9, penmanship 5, geography 4; in the fifth grade, art 5, history 4, geography 2; in the sixth grade mathematics 1; in the seventh grade, geography 4, history 4, French and German 4.

Among these boys and girls, those of normal school age or younger maintain a better school standing, both as to grade and mark, than those over age for the grade. This is important; why do these pupils of normal school age or under maintain this better school standing? A careful study of sustained absences does not account for the conditions, though absence and a study of diseases and accidents aid somewhat. The explanation lies in the advanced maturity of the pupils. Since we have no recourse to consecutive mental tests throughout the elementary school life of these pupils, but since we have recourse to their consecutive physical measurements in height, weight, and lung capacity, the problem resolves itself into finding the relation between growth and school standing. The previous study of these individuals, together with their weight, height, and vital indices, diseases, and physiological changes, shows that the taller, heavier children mature physiologically in advance of the shorter, lighter ones; and a study of ages, grades, and the marks of the boys shows that those above the average height of the group, i. e., those whose physiological age is accelerated, complete the last grade of the elementary school at 12 years $9\frac{5}{6}$ months of age with an average of 84.35, and those below average height or of retarded physiological development complete the elementary school work at 13 years $7\frac{4}{13}$ months of age with an average of 81.72.

The taller, heavier, or physiologically accelerated boys and girls, complete the elementary school at an earlier age and with a higher average mark than the short, light, or physiologically retarded boys and girls. In following the present investigation the reader should be careful not to confuse brightness or precocity with stages of mental maturity. A mind may be more nearly mature than another and still be of inferior quality. The former has certain instincts and mental traits associated with growth which the latter has not experienced. The former is accelerated in growth physiologically.

The second significant explanation of the node or drop in the school standing of the fourth grade lies in the rate of development in physiological maturity of the boys and girls at these ages. The growth charts show there is less physiological growth in height, weight, and lung capacity before the adolescent acceleration than at any other time before the cessation of growth after the adolescent acceleration.

2. SCHOOL STANDING AND GROWTH IN HEIGHT.

Since we have the individual curves for both height, weight, lung capacity, and school standing for all the individuals included in the data for comparison, a very general understanding of the correlations or relationships may be gotten by making individual comparisons for each group.

Comparing the boys' curves in Group I as given in Chart Ia for height and Chart Ic for school standing, it will be noted that—

The boys who are in advance of their normal grades, Nos. 4, 5, and 6, are above median height, and No. 10, who has low school marks, is slightly below median height. Of the boys in this group who are retarded, Nos. 11, 12, 13, and 14 are below median height, and No. 1 dropped below his relative height during the preadolescent period and was anæmic. No. 9 became retarded at 14 years on account of

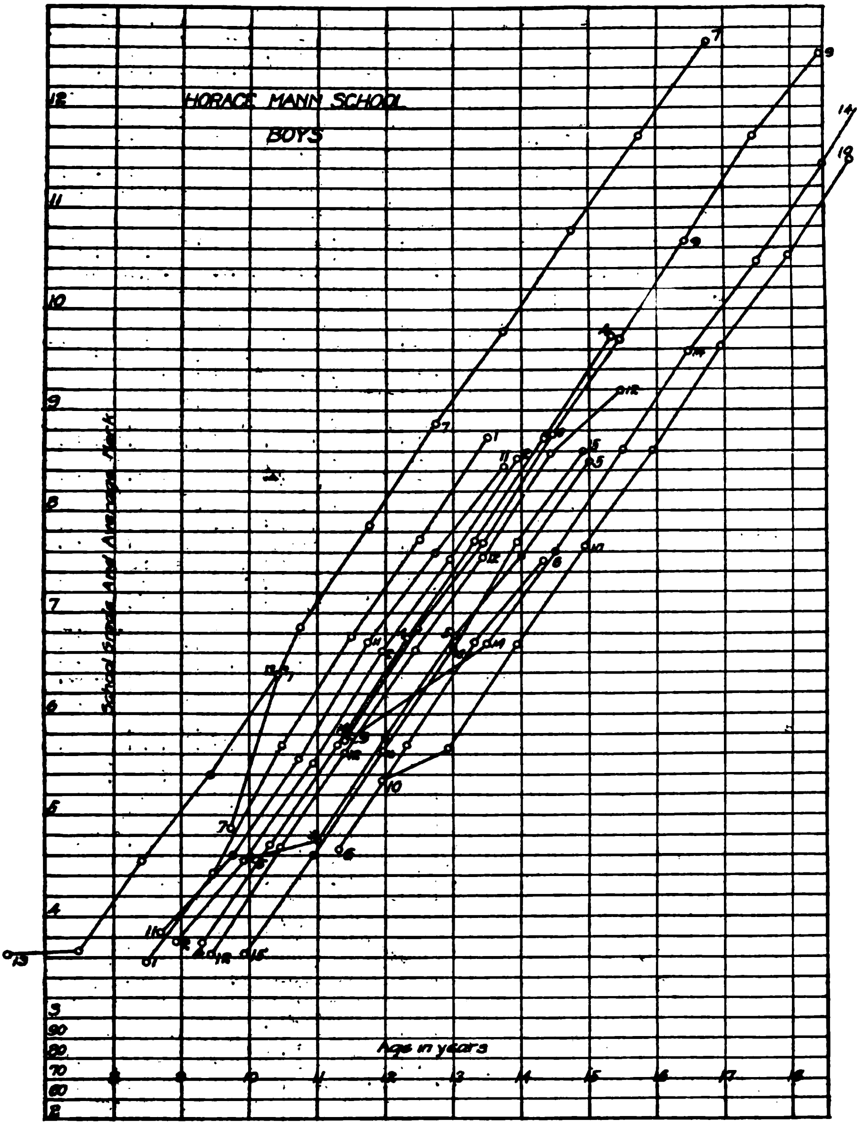

FIG. 32.—(Chart IIIc) School-standing curves for Horace Mann boys.

absence and again at 18. He has a somewhat irregular growth curve in height during adolescence and is frequently ill.

The school standing of the boys in the second group (Chart IIc) of 15 presents two cases of "skipping a grade," Nos. 13 and 15. No. 13 is retarded one year at 12, and No. 15 one year; after skipping a grade the latter again becomes retarded at 18. In this group Nos. 7 and 12 are in advance of their grades for the short periods attended in the elementary school, the former being above median height, the latter below. The retarded boys are Nos. 10, 11, 13, 14, and 15. All of these are below median height except No. 10, who is anæmic, has appendicitis, and enlarged tonsils.

Chart IIIc shows the same general tendencies for each boy to hold his relative position in regard to school standing and in his ranking with his companions from the elementary to the high school.

In this group 2 boys, Nos. 7 and 13, are in advance of their normal grades. The former is above median height and the latter left school before 12 with an average mark below passing for the last two years. No. 7 has the highest school average of the group.

The retarded boys are Nos. 4, 5, 6, 8, 10, 14, and 15. No. 5 skipped a grade at 13; Nos. 6, 10, and 14 were late entering from another school; Nos. 8, 10, 14, and 15 are below median height.

In the first group of 11 girls (Chart IVc) No. 2 is two grades in advance of her normal grade at 12 years of age, if the same standard for age and grade is used for girls as for boys. Since both enter the schools at about the same chronological age and are promoted on the same basis, this uniform norm seems justifiable, as previously stated. No. 9 is one year in advance of her grade at 16. No. 2 is above median height, and No. 9 below, with good health and excellent school standing extending back to the third grade, which was completed at the early age of 8 years 7 months.

The retarded girls of Chart Vc are Nos. 3, 6, 7, and 8, who are fairly close to median height. No. 3 missed a year and later skipped a grade. No. 7 has low average marks and No. 8 poor health. No. 11 repeated a grade and is short in stature and nervous.

In Chart VIc of 13 there are 4 cases of girls skipping grades and but one case of a girl failing to advance a grade each year, which was not due to low marks. There are 3 cases of retardation before 12 years, and not any at 16, since these girls later omit a grade. Nos. 5, 6, and 7 skipped a grade during the period of most rapid growth.

No. 8 shows a marked arrest in physical growth in height at 14, which lasts until 18 and probably after, and the school marks also take a decided drop and remain low until 18. No. 9's growth is arrested at 14, and the average marks also fall below previous ones with one exception, at 16 years, where it is 1 per cent higher than at 12. The same is true of No. 5, whose growth is arrested between 14 and 15.

The marks of this group (Chart VIIc) are primarily for the period between 12 and 18. There is a wider range of individual differences here than with the previous group. Since the group gives 4 cases of marked arrest during the adolescent period, it is worth while to note

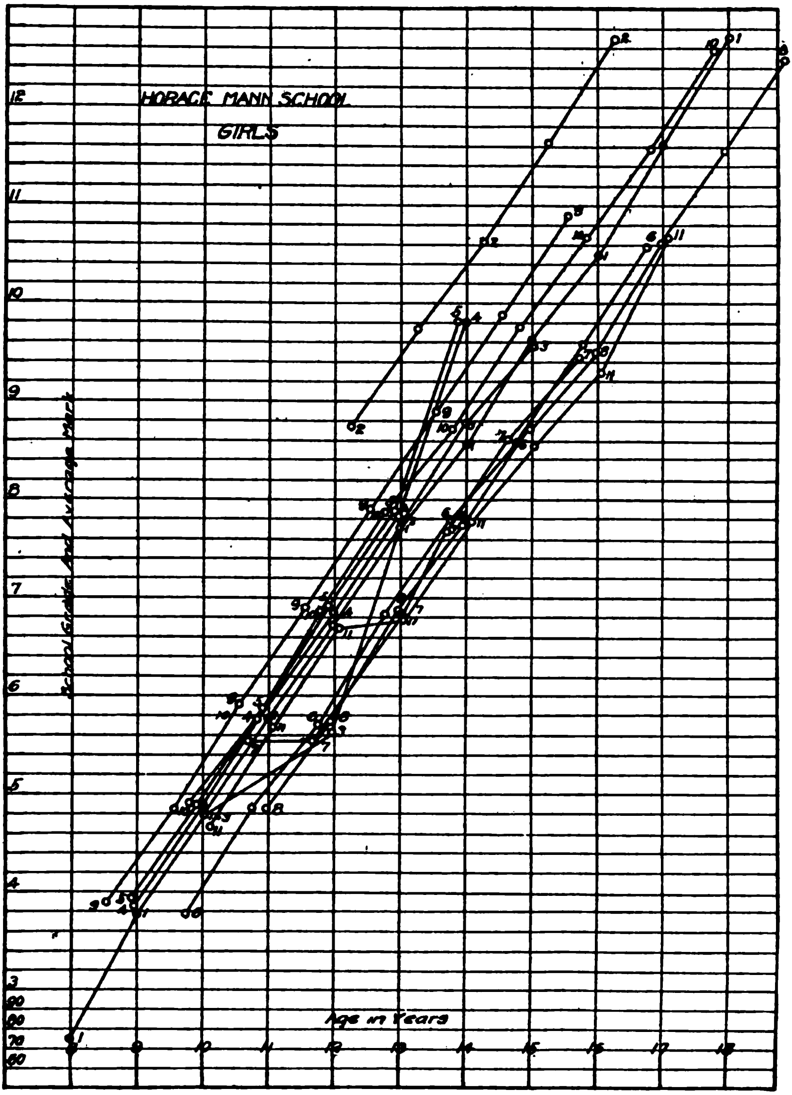

FIG. 33.—(Chart IVc) School-standing curves for Horace Mann School girls.

the corresponding changes in school standing. It may be noted all of these girls are retarded by grade except Nos. 1 and 3, who are above median height.

No. 2, who is also tall, maintained a high average mark, but was retarded one grade and had nervous trouble. No. 5's arrest in growth in height began to be most noticeable between 12 and 13 and continued until 17, and the final average mark began to fall between 14 and 15, and continued until 18. No. 6's physical growth was arrested between 12½ and 13½, and continued while the marks decreased between 15 and 16, and continued. No. 9's physical growth was arrested between 13 and 14, there was an accompanying drop in average mark, and both marks and growth increments continued low. No. 10 was arrested in height at 14 and the drop in

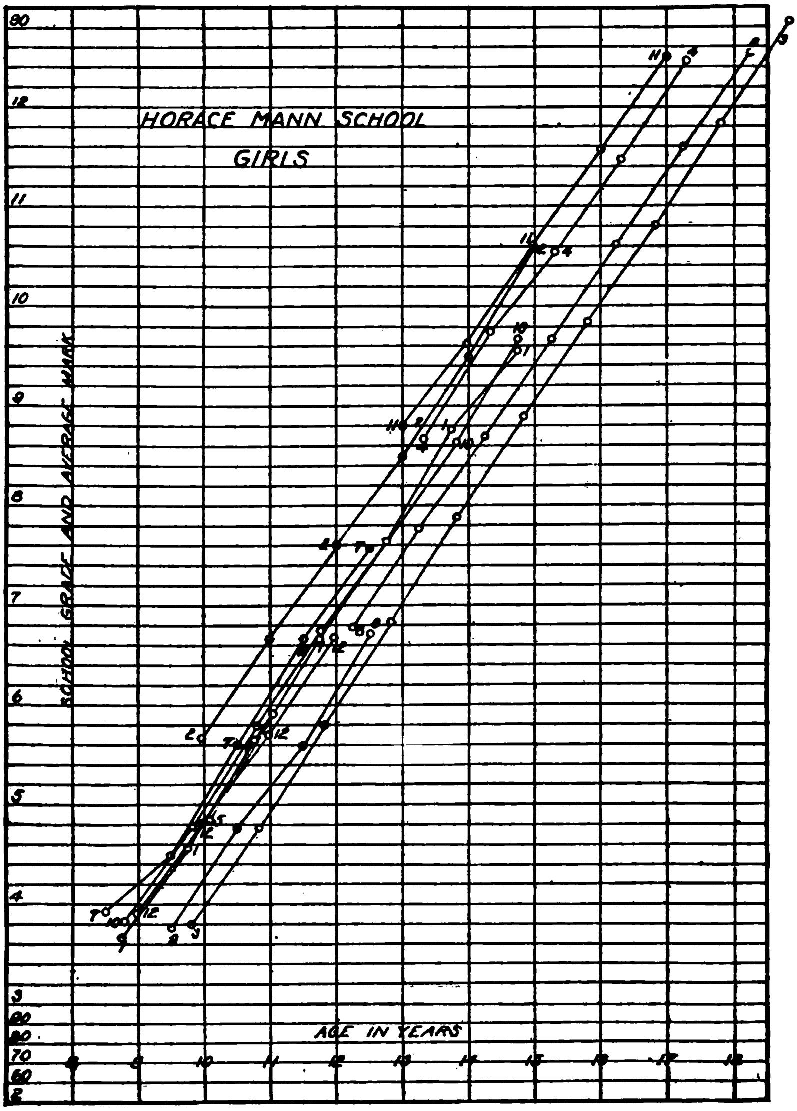

FIG. 34.—(Chart Vc) School-standing curves for Horace Mann School girls.

school marks between 14 and 15 continued. No. 11's arrest in physical growth in height occurred at 16 and the lowering of marks

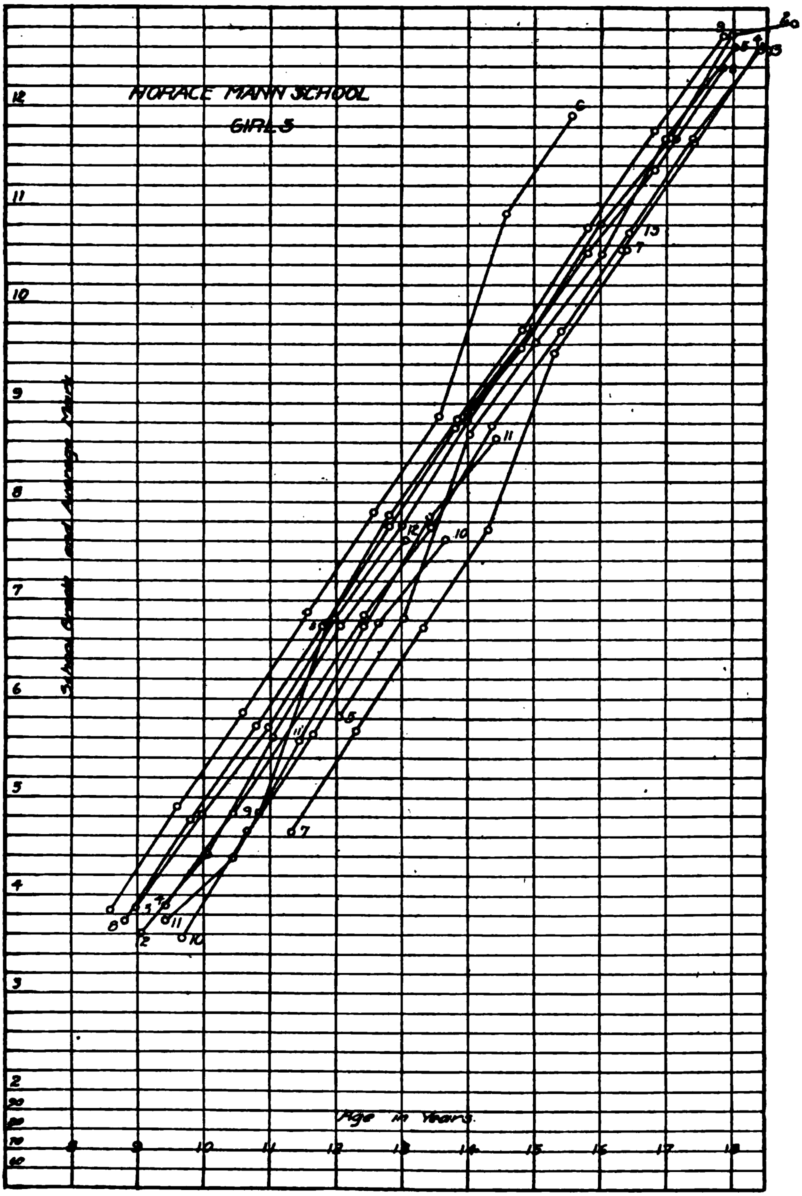

FIG. 35.—(Chart VIc) School-standing curves for Horace Mann School girls.

occurred between 16 and 17 and continued. These 5 girls were also retarded by grade at 12 and 16 years.

With the Francis W. Parker School boys is found remarkable uniformity from grade to grade and from one average mark to the next. No skipping, no dropping, and few individual fluctuations. There is, however, a wide range of individual differences, and the final average marks are in practically all cases low. In Chart VIIIc 1 boy (No. 2) is above average grade for his age, and 3 (Nos. 6, 7, and 8) are below. No. 2 is above median height; No. 6 is below, and Nos. 7, 8, and 10 about median height; No. 12 has the lowest marks of the group.

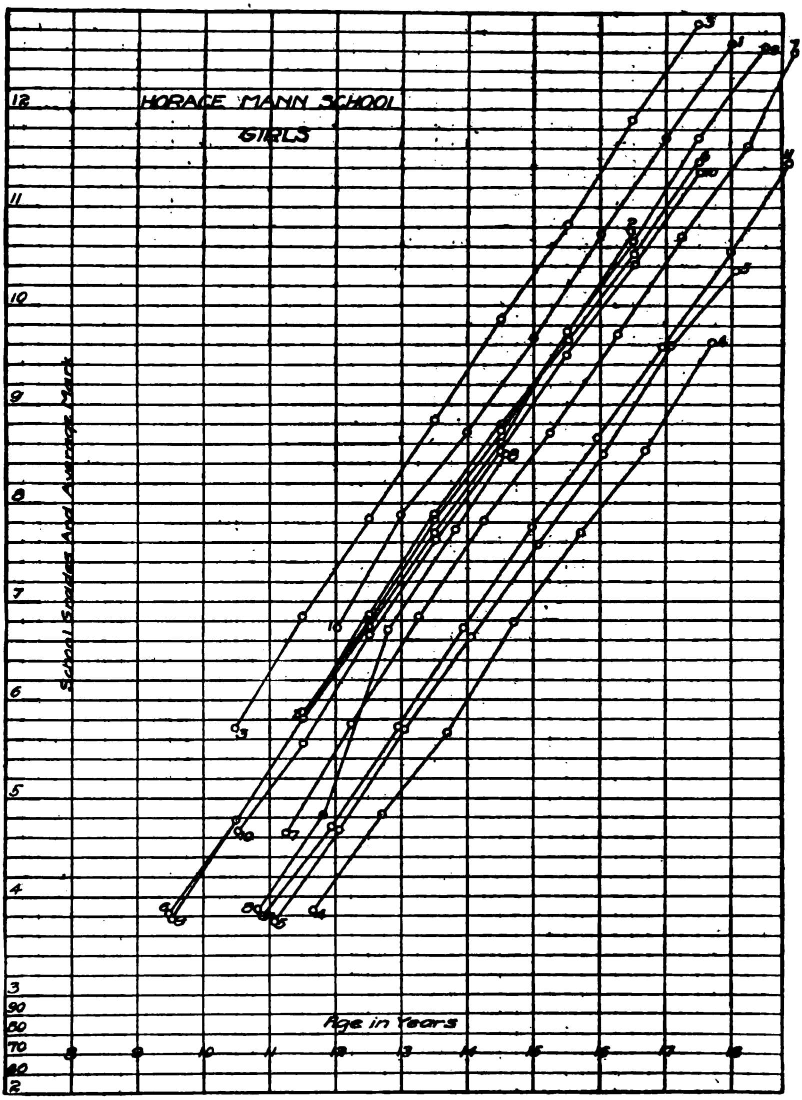

FIG. 36.—(Chart VIIc) School-standing curves for Horace Mann School girls.

It should be stated here that the Parker School is a comparatively small school, which keeps records and marks closely, although little emphasis is placed on marks.

Chart Xc shows remarkable uniformity of grades and marks and a narrow range of differences. This close uniformity makes it difficult to find correlations between the large number of individual differences and fluctuations in physical growth and school standing. Four of these girls are retarded by grades, Nos. 1, 4, 9, and 12. Two are above median height and 2 below. All show marked individual fluctuations. No. 12 has the lowest average, is of shortest stature, and shows more fluctuations than the others.

The girls, like the boys of this school, have lower average marks than the Horace Mann School pupils. In this group (Chart XIc) the final of all is 81 per cent, but 5 of these girls are one year in advance of their normal grade for their age, if we use our previous hypothesis that a year of school is equivalent to a grade. In general, the average marks of these 5 girls are higher than the others.

There are 3 girls (Nos. 2, 5, and 7) who are retarded by grade, and No. 2 is below median stature, No. 5 shows marked arrest from 12 to 18, and has low average marks. No. 7 shows arrest from 14 and has low marks. As a rule the children above median height are in normal grade or accelerated.

3. SCHOOL STANDING AND GROWTH IN WEIGHT.

In his investigations on the physical basis of precocity and dullness, Dr. Porter[1] found on the basis of age and grade distribution that "precocious are heavier, and dull children lighter, than the mean child of the same age. This establishes a basis of precocity and dullness." The basis of precocity, for Porter, was found in the unusually favorable physical development. Boas[2] found several serious objections to this conclusion, and maintained that "children who remain out of school for a long time will lag behind; vigorous ones will advance more rapidly." This is no doubt true, but the number of such children among the many thousands studied by Porter would have little effect in vitiating general conclusions. Another objection raised by Boas, which is very significant, was that these children were not "dull," but "retarded," and a retarded child may develop and become quite "bright."

In an attempt to ascertain the relation of precocity to physical development, Boas used data collected by Dr. G. M. West at Toronto, who, in turn, used the teacher's judgment in regard to the child's brightness. The results were diametrically opposed to Porter. Here, again, there is an apparent contradiction, due to an attempt to correlate "brightness," when based on the teacher's judgment, with physical development, instead of correlating a more definite criterion of a particular aspect, as evidenced by school standing, mental tests, or some similar measuring scale, with physical development. Porter's mistake was in concluding that mental development depended upon physical growth, instead of seeing that physical growth and mental growth are correlated; Boas's mistake was to assume that a teacher's estimate of a child's "brightness" at one age could be used as a standard for measuring mental development or mental maturity through several years.

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[1] See Porter (in bibliography), 4th reference.

[2] See Boas, 12th reference.

MacDonald, in his Washington studies, used the teachers' estimate of brightness as a basis, and Smedley in his study of Chicago children used the age and grade and both found that "bright" children are taller than "dull" ones. This conclusion is also claimed by Gratsianoff and Sack in Russia, but Gilbert[1] discovered no constant correlation between height and mental ability.

The same conclusions hold for weight as for height; Porter and Smedley found a positive correlation, West a negative correlation, and Gilbert no constant relationship.

The important conclusion here was long ago anticipated by Porter, but on account of the doubtful attitude of these other investigators toward his result, it has received little or no attention. He very wisely says, "No child whose weight *or height*[2] is below the average (*median or norm*) for its age should be permitted to enter a school grade beyond the average of its age except after such a physical examination as shall make it probable that the child's strength is equal to the strain."

4. SCHOOL STANDING AND GROWTH IN LUNG CAPACITY.

That there is a possible correlation between school standing and lung capacity is indicated by the fact that, if the 5 boys or 5 girls with the greatest lung capacity are selected, the average school marks for these are invariably above the average school marks of any 5 with the lowest average lung capacity. This holds true for each group, but it is, however, not a complete or accurate test, since all cases are not included and the grades and lung capacity are both materially influenced by the age of the boy or girl.

If the average lung capacity for the same period included within the school standing is taken, it throws some light on the correlations of the two variables, but only when the chronological and physiological ages are taken into consideration, since the lung capacity increases with age and the marks tend, on the average, to decrease in the upper grades. It is apparent, then, that any attempt at correlation will have to take into consideration the median lung capacity for different ages and the median mark for the different ages within the same group. But since there are so few individuals included within a grade and since the marks vary so little for the same individuals from grade to grade, it is sufficient to take the average mark for each individual and compare it with the final average mark of all the individuals from each school and determine whether the individual is above or below average school mark, making proper allowance for retardation and acceleration.

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[1] See Gilbert, 2d reference.

[2] The words in italics are the writer's.

The median lung capacity for boys and girls for different ages are those previously found for the Francis W. Parker School and the University of Chicago elementary and high school and are approximately the same as those used at the Horace Mann School by Dr. Wood.

Selecting the 5 in Chart Ic whose standing is above average mark for the group, Nos. 1, 3, 11, 12, 14, the first 4 are above the median in lung capacity; No. 4 is retarded by grade, which will help to explain his high average mark. No. 7 also has high lung capacity, but he is in advance of his normal grade.

Of those below the average grade, No. 4 has good lung capacity but entered this school late and apparently poorly prepared. No. 10 has comparatively low lung capacity and is below average mark and retarded in grade.

Those whose marks are above the average in Chart IIc are Nos. 1, 4, 5, 6, 7, 9, and 15. Nos. 1, 4, 5, 7, and 9 are above the median in lung capacity; Nos. 6 and 15 are retarded one year in grade, which would help to explain their higher average mark.

Of those below average mark Nos. 2 and 3 are above median lung capacity, Nos. 8, 11, and 12 are below median lung capacity, No. 10 is below median lung capacity part of the time and below grade, No. 13 below median lung capacity but above grade, and No. 14 below median lung capacity and grade.

In Chart IIIc those below the average mark, 81 per cent, are Nos. 2, 3, 8, 10, 11, 12, 13, and 14, and all are below median lung capacity except No. 10, who is slightly above median and two years retarded by grade; Nos. 2 and 3 are above median lung capacity but are in normal grade and only 1 per cent below the average mark.

Those above the average school mark in Chart IVc are Nos. 4, 5, and 9. The first two girls are above median lung capacity, and No. 9 is below with no apparent cause.

Those below average school mark are Nos. 1, 2, and 7. No. 1 is above the median lung capacity, and Nos. 2 and 7 are above during most of the school course. No. 2 is two grades above normal, and No. 7 is one grade below and frequently absent.

Those above average mark in this group (Chart Vc) are Nos. 3, 5, and 12. No. 3 is above median lung capacity, but below grade; No. 5 is above and No. 12 about median lung capacity. Those below average mark are Nos. 2, 4, 6, 7, 9, and 11a. Nos. 2, 4, 6, and 7 are above and Nos. 9 and 11 below median lung capacity. Nos. 2 and 4 are above average grade, which would help explain their low mark. No. 6 had a record for but one year; No. 9 is retarded, and No. 11 in advance of his grade one year.

Those above average mark in this group (Chart VIc) are Nos. 2, 3, 6, and 9. Nos. 2, 3, and 6 are above median lung capacity, and No. 9

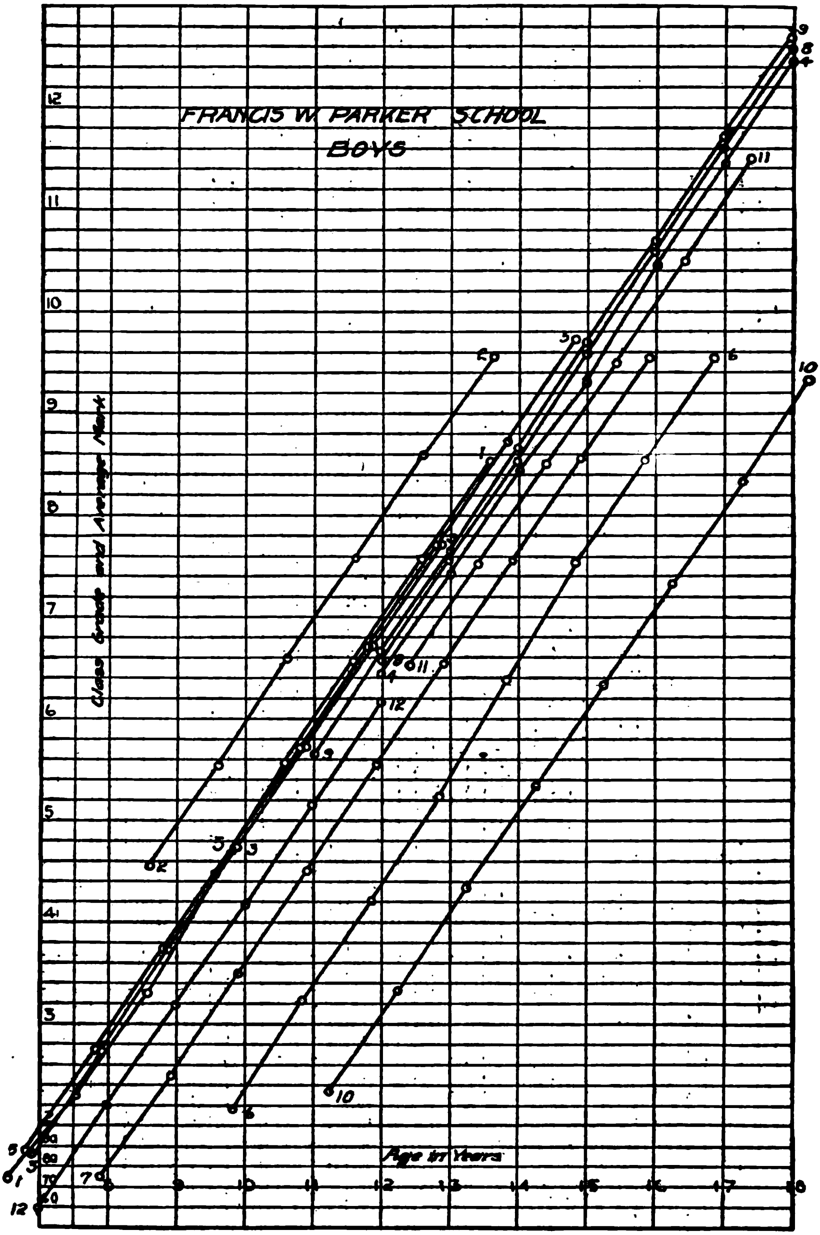

FIG. 37.—(Chart VIIIc) School standing curves for Francis W. Parker School boys.

is above median lung capacity until 11 years of age. Those below average mark are Nos. 4, 5, 7, 8, 10, 11, 12, and 13. No. 4 is above median lung capacity, but is one year in advance of his normal grade;

No. 5 is above median lung capacity, but gradually drops in school standing; No. 7 is below median lung capacity and below grade;

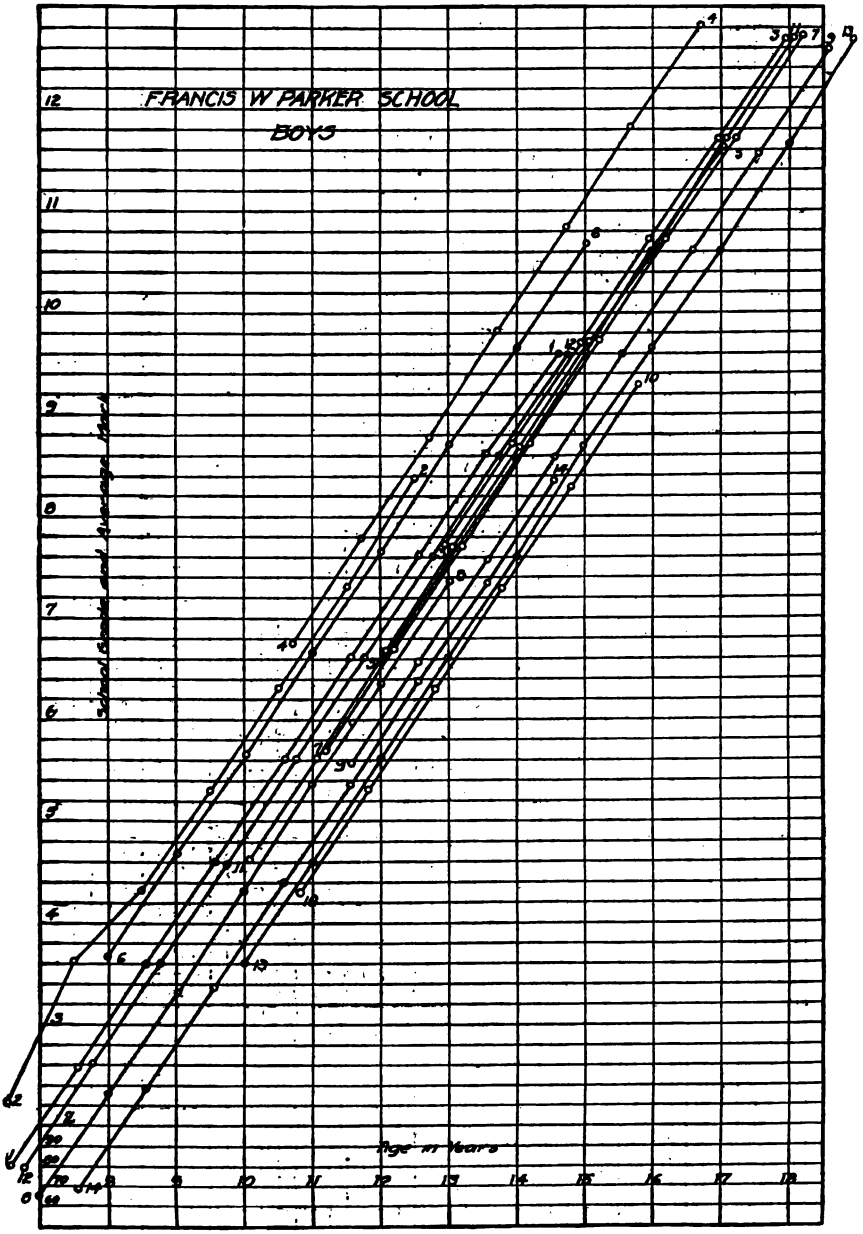

FIG. 38.—(Chart IXc) School standing curves for Francis W. Parker School boys.

No. 8 is above median lung capacity, but slightly below average mark; No. 10 is below median lung capacity, below grade, and below average mark; Nos. 11, 12, and 13 are below median lung capacity.

In Chart VIIc those above average mark are Nos. 2, 3, and 8. Nos. 2 and 3 are above and No. 8 below median lung capacity, but No. 8 is two years below normal grade at 12 years, which helps to explain the high mark. Those below average mark are Nos. 5, 9, 10, and 11. In Chart VIIIc those above average mark are Nos. 3, 2, 5, 8, and 9.

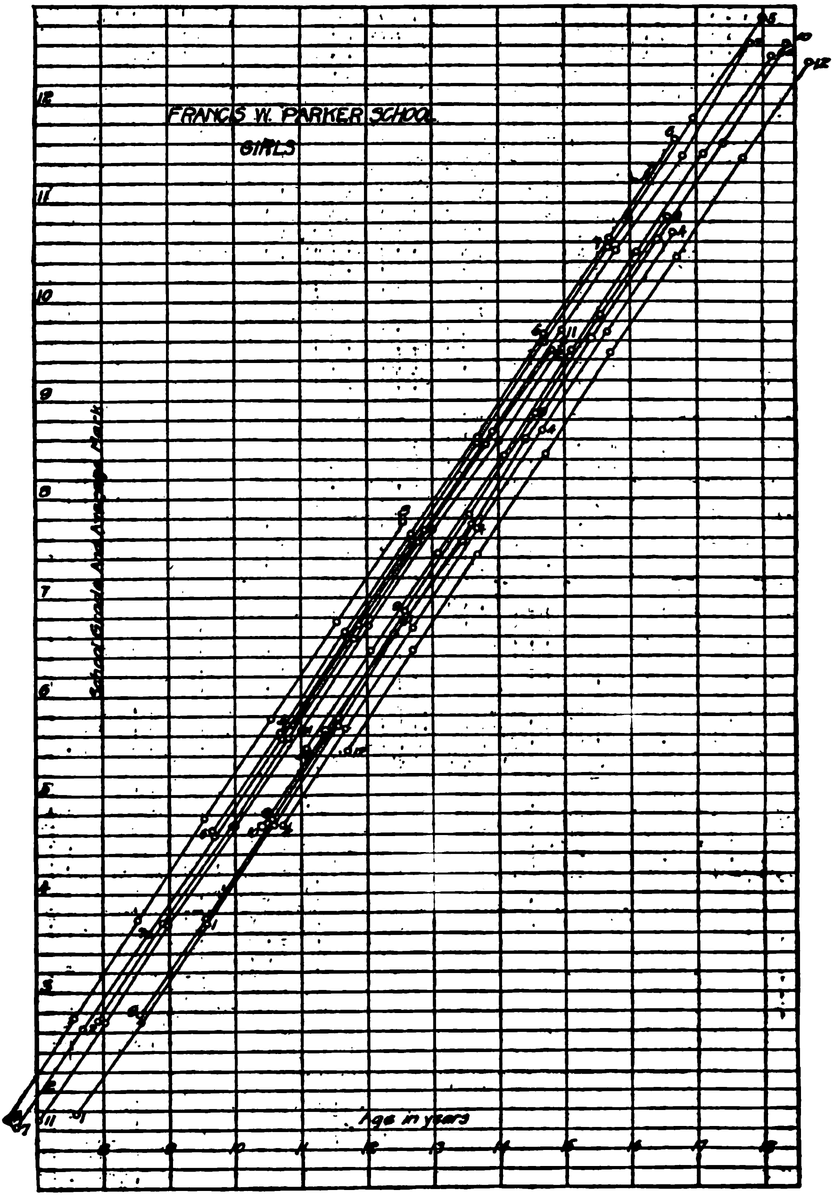

FIG. 39.—(Chart Xc) School standing curves for Francis W. Parker School girls.

Nos. 2, 3, 5, and 8 are above median lung capacity and No. 9 above during later school life. No. 2 is also above school grade.

Those below average school mark are Nos. 4, 6, 10, and 12. No. 4 is above median lung capacity for the first part of the school work and two grades retarded, but is later above in lung capacity and gradually increases in average mark. No. 10 is below median lung capacity and is three grades retarded; No. 12 is below median lung capacity.

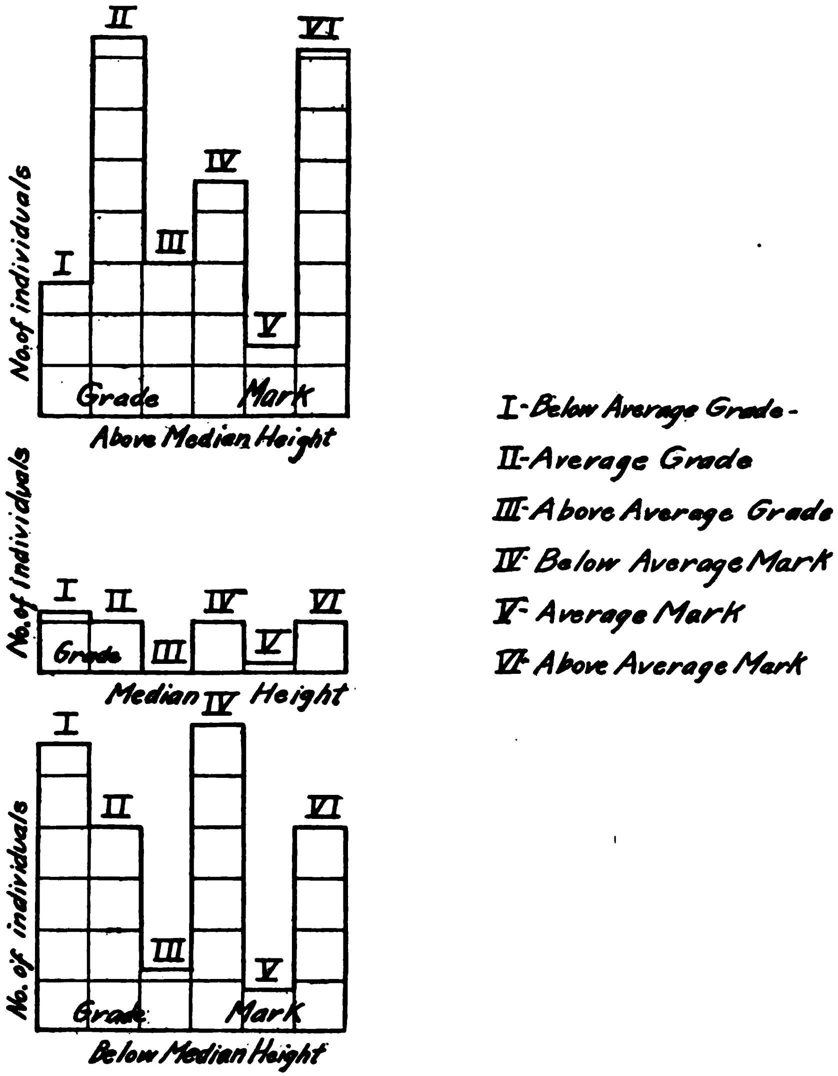

FIG. 40.—Height and school standing.

In this group (Chart IXc) there are 4 boys below the average school mark for the Francis W. Parker School boys. No. 2 is one grade above normal, but has uniformly low standing. Nos. 10 and 14 are retarded one grade, No. 14 is slightly above median lung capacity, and No. 10 starts high, but drops below median lung capacity, and No. 13 is below.

In this group of Francis W. Parker girls (Chart Xc) Nos. 1, 3, 4, 5, 8, 9, and 11 are above average mark. Nos. 1, 3, 4, 5, 8, and 9 show many fluctuations, but on the whole are above median lung capacity, and No. 11 is below median lung capacity. Nos. 1, 4, and 9 are below normal grade. Of those below average mark, Nos. 2, 6, 6a, 7, 10, and 12 are slightly above median lung capacity and in normal grade; Nos. 6, 10, and 12 are below median lung capacity; and No. 7 generally above median lung capacity.

Those above average mark are Nos. 1, 4, 6, 8, and 9. Nos. 1, 4, and 8 are above median lung capacity; No. 6 is above, but takes a decided drop at the last measurement; No. 9 is about median lung capacity. Those below average mark are Nos. 2, 3, 5, and 7. No. 2 is below median lung capacity; No. 3 above; No. 5 usually below; No. 7 above and retarded one grade. As a rule, the children above the median in lung capacity are in normal grade or accelerated. This is a little more marked than in height or weight.

Checking the individuals whose curves have been plotted for age, height, weight, lung capacity, school grade, and school mark, and giving the results graphically, it will be seen that the majority of children above median height are in or above normal grade and above the average in marks. Of those below median height the majority of children are below or in normal grade and below average mark.

Figure 40 refers to the relation between median height and school standing. The coefficients of correlation between the height, weight, lung capacity, and school standing for all individuals are being worked out, but are not included in this bulletin.

5. EDUCATIONAL CONCLUSIONS WITH COROLLARIES.

The general conclusion to this section of our study is that if pedagogical age be accepted as a fair equivalent in these three efficient schools to mental development, the tall, heavy boys and girls with good lung capacity are older physiologically and further along in their stages toward mental maturity as evidenced by school progress than the short, light boys and girls.

The main educational corollaries which logically follow from this study would require that our school systems, public and private, be graded on the physiological age and the accompanying stage of mental maturity of boys and girls in place of the chronological age, as is now done. This would require that tall, healthy children of accelerated physiological age be encouraged to proceed through school as rapidly as possible within the limits of thoroughness, and that the small, light children of retarded physiological development be kept below or in the normal grade doing supplementary work, since these short, light pupils are immature mentally, although in many instances precocious in brightness. It also follows from the study that rapid, healthy growth favors good mental development, and therefore the healthy growing child should have plenty of physical and mental exercise.

The Binet measuring scale for intelligence, as is well known, is based on a two dimensional scale—that of chronological age and mental age—but does not take into account the third dimension, or physiological age, which according to the results of this investigation is closely correlated with the mental age, as evidenced by school standing. If this conclusion is correct, and it certainly follows from the data included in this study, would it not be possible for a child of immature physiological growth to be of normal mental growth for his physiological age and still to fall short of the mental age required by the tests for his chronological age in years? For a complete and comprehensive system of mental tests to be used as a measuring scale of intelligence, it will be necessary to go further and supplement the Binet tests and include the essential criteria for determining the physiological age of the child. We have now reached a stage in our knowledge of child development when we can begin to search intelligently for these physiological criteria in order to formulate more adequate tests as measuring scales for intelligence and for school standing. The grading of our schools must be adjusted to fit the mental and physiological age of the child in place of its chronological age, which is not fairly representative of the other two ages.

III. STATISTICAL

(A) INDIVIDUAL INCREMENTS OF GROWTH

TABLE 13.—*Increments of growth in height for a group of*

No.	7 years.			7½ years.			8 years.			8½ years.			9 years.			9½ years.			10 years.		
	Height.	Increment, 6–7 years.	Per cent gain.	Height.	Increment, 6½–7½ years.	Per cent gain.	Height.	Increment, 7–8 years.	Per cent gain.	Height.	Increment, 7½–8½ years.	Per cent gain.	Height.	Increment, 8–9 years.	Per cent gain.	Height.	Increment, 8½–9½ years.	Per cent gain.	Height.	Increment, 9–10 years.	Per cent gain.
	Cm.	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm*	*Cm.*		*Cm.*	*Cm.*	
101	109.2						112.9	3.7	3.3	115.0			116.0	3.1	2.7	119.7	4.7	4.1	121.0	5.0	4.3
102				109.5						114.1	4.6	4.2				116.9	2.8	2.5			
103	111.6	4.6	4.3				116.0	4.4	3.9				121.0	5.0	4.3				125.0	4.0	3.3
104				112.0	3.3	3.0				116.7	4.7	4.2				121.2	4.5	3.9			
105				112.7						116.8	4.1	3.6				121.2	4.4	3.8			
106	112.0						115.8	3.8	3.4				117.0	1.2	1.0				124.8	7.8	6.7
107				113.4						118.2	4.8	4.2				123.0	4.8	4.1			
108							114.1						123.4	9.3	8.2				127.0	3.6	2.9
109	114.8			119.4	6.7	5.9	120.2	5.4	4.7	120.2	.8	.6				126.1	5.9	4.9	128.7		
110							120.0						122.1	2.1	1.8				127.1	5.0	4.1
111				115.4			120.7						125.0	4.3	3.6				130.2	5.2	4.2
112	116.2	5.0	4.5				121.6	5.4	4.6				125.6	4.0	3.3				130.0	4.4	3.5
113	116.3						121.8	5.5	4.7				126.1	4.3	3.5	132.0					
114	116.6	6.0	5.4				122.0	5.4	4.6				128.6	6.6	5.4				133.6	5.0	3.9
115				117.2	5.2	4.6				122.7	5.5	4.7				129.6	6.9	5.6			
116	118.0						121.4	3.4	2.9				125.5	4.1	3.4				130.4	4.9	3.9
117	118.0						121.0	3.0	2.5										130.1		
118				118.5	4.3	3.8				123.0	4.5	3.8				127.8	4.8	3.9	132.0		
119				118.4						124.6	6.2	5.2				129.4	4.8	3.9			
120				119.0	4.0	3.5				123.0	4.0	3.4				128.2	5.2	4.2			
121				119.8						123.0	3.2	2.7				128.2	5.2	4.2			
122	120.2									124.5						130.4	5.9	4.8			
123				120.0						123.5	3.5	2.9				129.0	5.5	4.5			
124				121.3	5.8	5.0				126.3	5.0	4.1	129.7			131.6	5.3	4.2			
125							126.0						129.6	3.6	2.9				135.3	5.7	4.4
Av.		5.2	4.7		4.9	4.3		4.4	3.9		4.2	3.6		4.3	3.6		5.5	4.2		5.1	4.1
Av. var.		.5			1.0			.9			.9			1.4			.8			.7	
126	121.4						129.2	7.8	6.4				133.3	4.1	3.2				138.6	5.3	4.0
127	122.9						127.7	4.8	3.9				132.8	4.1	3.7				137.4	4.6	3.5
128	123.0						128.7	5.7	4.6				135.3	6.6	5.1				141.1	5.8	4.3
129				124.0						130.0	6.0	4.8				134.6	4.6	3.5			
130	124.5			129.3									133.8			137.1			140.0	6.2	4.6
131	125.0									130.1						134.5	4.4	3.4			
132				125.0									132.6			137.2					
133	125.5						133.6	8.1	6.5				138.0	4.4	3.3	143.5					
134				125.5			127.3														
135				125.6						134.4	8.8	7.0				139.2	4.8	3.6			
136				125.6			131.6						136.6	5.0	3.8				141.4	4.8	3.5
137				125.7									131.8			134.7					
138	125.8						131.2						138.6	7.4	5.6				144.0	5.4	3.9
139				125.9			129.7						138.4	8.7	6.7	138.4					
140				125.9						132.1	6.2	4.9				137.4	5.3	4.0			
141				126.0						131.5	5.5	4.4				135.0	3.5	2.7			
142				126.0	7.2	6.1	129.4			130.2	4.2	3.3							139.0		
143	126.4			132.1						139.1	7.0	5.3							147.0		
144				127.5												138.3					
145				131.3	5.9	4.7				136.8	5.5	4.2				143.2	6.4	4.7			
146	132.0						138.4	6.4	4.9				144.2	5.8	4.2	147.4			150.3	6.1	4.2
147	132.4	8.0	6.4				136.4	4.0	3.0				141.6	5.2	3.8				147.5	5.9	4.2
148	128.3			133.0									135.6			140.9			141.3	5.7	4.2
149				133.3						139.4	6.1	4.6				142.1	2.7	1.9			
150	139.6	9.6	7.4				145.1	5.5	3.9										153.6		
Av.	121.8	8.8	6.9	122.7	6.5	5.9	125.7	6.0	4.7	125.9	6.2	4.8	130.5	6.5	4.9	132.6	4.5	3.4	135.9	5.5	4.0
Av. var.		.8			.7			1.2			.9			1.8			.9			.5	

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[1] The tables for the boys' heights (4 and 5) may be found on pages 26–29.

MATERIAL.

IN HEIGHT, WEIGHT, AND LUNG CAPACITY.

50 boys with consecutive measurements from 7 to 13 years of age.[1]

10½ years.			11 years.			11½ years.			12 years.			12½ years.			13 years.			
Height.	Increment, 9½–10½ years.	Per cent gain.	Height.	Increment, 10–11 years.	Per cent gain.	Height.	Increment, 10½–11½ years.	Per cent gain.	Height.	Increment, 11–12 years.	Per cent gain.	Height.	Increment, 11½–12½ years.	Per cent gain.	Height.	Increment, 12–13 years.	Per cent gain.	No.
Cm.	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		
......	....	....	123.6	2.6	2.1	125.6	....	....	127.5	3.9	3.2	129.7	4.1	3.3	131.2	3.7	2.9	101.
121.4	4.5	3.8	......	....	....	125.6	4.2	3.4	......	....	....	128.4	2.8	2.3	......	....	....	102.
......	....	....	129.5	4.5	3.6	......	....	....	132.3	2.8	2.2	......	....	....	......	....	....	103.
125.0	3.8	3.1	......	....	....	128.7	3.7	3.0	......	....	....	133.2	4.5	3.5	......	....	....	104.
126.0	4.8	4.0	......	....	....	131.6	5.6	4.4	......	....	....	135.3	3.7	2.8	......	....	....	105.
......	....	....	128.7	3.9	3.1	......	....	....	132.9	4.2	3.3	......	....	....	137.0	4.1	3.1	106.
128.4	5.4	4.4	......	....	....	132.6	4.2	3.3	......	....	....	......	....	....	......	....	....	107.
......	....	....	130.1	3.1	2.4	......	....	....	134.2	4.1	3.2	......	....	....	139.4	5.2	3.9	108.
......	....	....	......	....	....	130.5	....	....	138.4	....	....	138.9	8.4	6.4	143.5	5.1	3.7	109.
......	....	....	132.3	5.2	4.1	......	....	....	135.4	3.1	2.3	......	....	....	139.9	4.5	3.3	110.
......	....	....	133.6	3.4	2.6	......	....	....	137.6	4.0	3.0	......	....	....	142.1	4.5	3.3	111.
......	....	....	134.2	4.2	3.2	......	....	....	138.0	3.8	2.8	......	....	....	141.6	3.6	2.6	112.
135.7	3.7	2.8	......	....	....	140.9	5.2	3.8	......	....	....	145.7	4.8	3.4	......	....	....	113.
......	....	....	138.9	5.3	4.0	......	....	....	......	....	....	......	....	....	148.5	....	....	114.
133.2	3.6	2.8	......	....	....	137.5	4.3	3.2	......	....	....	142.3	4.8	3.5	......	....	....	115.
......	....	....	135.5	5.1	3.9	......	....	....	139.3	3.8	2.8	......	....	....	146.0	6.7	4.8	116.
......	....	....	131.0	.9	.7	133.0	....	....	......	....	....	138.1	5.1	3.8	139.7	....	....	117.
......	....	....	134.2	2.2	1.7	......	....	....	137.4	3.2	2.4	......	....	....	140.2	2.8	2.0	118.
134.1	4.7	3.6	......	....	....	138.0	3.9	2.9	......	....	....	......	....	....	......	....	....	119.
133.9	5.7	4.4	......	....	....	139.2	5.3	4.0	......	....	....	......	....	....	......	....	....	120.
133.0	4.8	3.7	......	....	....	135.9	2.9	2.2	......	....	....	141.8	5.9	4.3	......	....	....	121.
133.9	3.5	2.7	......	....	....	138.1	4.2	3.1	......	....	....	146.0	7.9	5.7	......	....	....	122.
133.2	4.2	3.3	......	....	....	137.1	3.9	2.9	......	....	....	140.9	3.8	2.8	......	....	....	123.
134.7	3.1	2.4	139.3	....	....	......	....	....	143.4	4.1	2.9	......	....	....	150.1	6.7	4.7	124.
......	....	....	139.1	3.8	2.8	......	....	....	144.2	5.1	3.7	......	....	....	149.6	5.4	3.7	125.
......	4.3	3.4	......	3.7	2.9	......	4.3	3.3	......	3.8	2.9	......	5.0	3.8	......	4.8	3.5	Av.
......	.7	....	......	1.0	....	......	.6	....	......	.4	....	......	1.2	....	......	1.0	....	Av. var.
......	....	....	144.1	5.5	4.0	148.1	....	....	......	....	....	155.0	6.0	4.7	......	....	....	126.
......	....	....	141.4	4.0	2.9	......	....	....	146.0	4.6	3.3	......	....	....	150.5	4.5	3.1	127.
......	....	....	147.1	6.0	4.3	......	....	....	156.5	9.4	6.4	......	....	....	166.7	10.2	6.5	128.
141.4	6.8	5.0	......	....	....	144.0	2.6	1.8	......	....	....	148.9	4.9	3.4	......	....	....	129.
143.5	6.4	4.7	145.1	5.1	3.6	......	....	....	150.0	4.9	3.4	155.5	....	....	......	....	....	130.
141.2	6.7	5.0	147.0	....	....	......	....	....	150.9	3.9	2.6	......	....	....	158.1	7.2	4.8	131.
141.4	4.2	3.1	......	....	....	145.2	3.8	2.7	......	....	....	146.6	1.4	1.0	......	....	....	132.
148.1	4.6	3.2	......	....	....	152.2	4.1	2.8	......	....	....	159.9	7.7	5.1	......	....	....	133.
138.6	....	....	142.0	....	....	144.6	6.0	4.3	146.8	4.8	3.4	149.0	4.4	3.0	......	....	....	134.
143.6	4.4	3.2	......	....	....	148.6	5.0	3.5	......	....	....	......	....	....	......	....	....	135.
......	....	....	146.8	5.4	3.8	......	....	....	151.9	5.1	3.5	......	....	....	......	....	....	136.
139.6	4.9	3.6	......	....	....	144.4	4.8	3.4	......	....	....	149.1	4.7	3.3	......	....	....	137.
......	....	....	151.0	6.0	4.2	......	....	....	156.6	5.6	3.7	......	....	....	......	....	....	138.
......	....	....	147.3	....	....	......	....	....	150.8	3.5	2.4	151.6	....	....	155.7	4.9	3.2	139.
142.2	4.8	3.5	......	....	....	147.3	5.1	3.6	......	....	....	......	....	....	......	....	....	140.
140.2	5.2	3.9	......	....	....	144.5	4.3	3.1	......	....	....	148.9	4.4	3.0	......	....	....	141.
141.5	....	....	145.0	6.0	4.3	147.5	6.0	4.2	149.8	4.8	3.3	150.8	3.3	2.2	153.1	3.3	2.2	142.
150.5	....	....	......	....	....	156.2	5.7	3.8	......	....	....	161.0	4.8	3.1	......	....	....	143.
143.2	4.9	3.5	......	....	....	147.1	3.9	2.7	......	....	....	152.5	5.4	3.7	......	....	....	144.
148.2	5.0	3.5	......	....	....	152.5	4.3	2.9	......	....	....	159.7	7.2	4.7	......	....	....	145.
153.1	5.7	3.9	156.3	6.0	4.0	......	....	....	161.2	4.9	3.1	......	....	....	168.9	7.7	4.8	146.
......	....	....	152.1	4.6	3.1	......	....	....	158.1	6.0	3.9	......	....	....	163.9	5.8	3.7	147.
144.2	3.3	2.3	145.6	4.3	3.0	......	....	....	150.3	4.7	3.2	153.6	....	....	......	....	....	148.
145.7	3.6	2.5	......	....	....	149.0	3.3	2.3	......	....	....	152.1	3.1	2.1	......	....	....	149.
155.2	....	....	157.8	4.2	2.7	......	....	....	161.8	4.0	2.5	......	....	....	167.6	5.8	3.6	150.
139.1	5.0	3.6	140.6	5.2	3.6	140.9	4.5	3.2	145.2	5.1	3.5	146.7	4.9	3.3	149.2	6.2	3.9	Av.
......	.8	....	......	.8	....	......	.8	....	......	.9	....	......	1.3	....	......	1.9	....	Av. var.

TABLE 14.—*Increments of growth in height for a group of 50*

No.	12 years.			12½ years.			13 years.			13½ years.			14 years.		
	Height.	Increment, 11–12 years.	Per cent gain.	Height.	Increment, 11½–12½ years.	Per cent gain.	Height.	Increment, 12–13 years.	Per cent gain.	Height.	Increment, 12½–13½ years.	Per cent gain.	Height.	Increment, 13–14 years.	Per cent gain.
	Cm.	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*	
151	134.9			137.2						149.0	11.8	8.6			
152	134.0	5.6	4.4				137.9	3.9	2.9	140.6					
153	134.6			136.6	3.8	2.9	139.4	4.8	3.6	142.0	5.4	4.0			
154	135.4						145.3	9.9	7.3				149.6	4.3	3.0
155	136.3	5.1	3.9				146.1	9.8	7.2				153.4	7.3	5.0
156				137.2			140.8						144.1	3.3	2.3
157	137.9	2.5	1.8				144.0	6.1	4.4						
158							137.9						141.6	3.7	2.7
159	137.2						142.0	4.8	3.5	144.0					
160	138.6						143.6	5.0	3.6				149.1	5.5	3.8
161				138.3						143.5	5.2	3.8			
162				139.4	2.3	1.7				147.0	7.6	5.5			
163	139.6	3.6	2.6				143.7	4.1	2.9				152.9	9.2	6.4
164	140.0						146.6	6.6	4.2				155.2	8.6	5.9
165				140.1	5.7	4.2				147.2	7.1	5.1			
166	141.6						152.0	10.4	7.3	156.2					
167				141.6	2.3	1.7				148.7	7.1	5.0	153.9		
168	142.5	4.0	2.9	144.5						149.0	4.5	3.1			
169	142.2						147.2	5.0	3.5				155.4	8.2	5.6
170				142.0	2.9	2.1	144.2						148.4	4.2	2.9
171	142.0	9.0	6.7				145.2	3.2	2.2				155.0	9.8	6.7
172				143.4	4.8	3.5				147.7	4.3	3.0			
173				144.6	5.7	4.1	156.0						159.5	3.5	2.2
174				145.4	4.4	3.1				149.7	4.3	3.0			
175				145.4	6.1	4.4				151.7	6.3	4.3			
Average		5.0	3.7		4.2	3.1		6.1	4.4		6.4	4.5		6.1	4.2
Average var		1.6			1.2			2.1			1.6			2.2	
176	140.5						142.4	1.9	1.3				148.5	6.1	4.3
177	141.7			145.5			146.8	5.1	3.6	148.9	3.4	2.3	150.0	3.2	2.2
178	143.8						149.0	5.2	3.6				153.5	4.5	3.0
179	144.9	4.3	3.1				148.2	3.3	2.3				156.6	8.4	5.7
180				145.7	4.7	3.3				150.6	4.9	3.4			
181	145.9	4.1	2.9				152.0	6.1	4.2				155.4	3.4	2.2
182				146.3	3.3	2.3				152.0	5.7	3.9			
183	146.8						151.6	4.8	3.3				154.8	3.2	2.1
184				146.5	4.6	3.2				151.4	4.9	3.3	155.1		
185	146.3						153.0	6.7	4.6				160.7	7.7	5.0
186				147.6	4.6	3.2	151.2								
187				148.0						156.1	8.1	5.5			
188				149.4	5.3	3.7									
189				149.3	4.8	3.3				153.2	3.9	2.6			
190	149.0						154.8	5.8	3.9				165.1	10.3	6.7
191				150.7	3.0	2.0				157.3	6.6	4.4			
192				151.2	2.9	2.0				160.5	9.3	6.2			
193				151.6	5.9	4.0				161.5	9.9	6.5			
194	151.1						156.7	5.6	3.7				162.9	6.2	4.0
195							152.1						160.2	8.1	5.3
196				152.5	5.4	3.7				155.6	3.1	2.0			
197				153.9	5.9	4.0	158.0						165.3	7.3	4.6
198				154.2	9.7	6.7				161.6	7.4	4.8			
199				155.7	6.3	4.2	160.7						169.2	8.5	5.3
200				158.5	6.5	4.3				163.4	4.9	3.1			
Average	141.2	4.2	3.0	146.3	5.2	3.6	147.9	5.0	3.4	151.1	6.0	4.0	155.0	6.4	4.2
Average var		.1			1.2			1.1			1.9			2.0	

boys with consecutive measurements from 12 to 17 years of age.

14½ years.			15 years.			15½ years.			16 years.			16½ years.			17 years.			
Height.	Increment, 13½–14½ years.	Per cent gain.	Height.	Increment, 14–15 years.	Per cent gain.	Height.	Increment, 14½–15½ years.	Per cent gain.	Height.	Increment, 15–16 years.	Per cent gain.	Height.	Increment, 15½–16½ years.	Per cent gain.	Height.	Increment, 16–17 years.	Per cent gain.	No.
Cm.	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		*Cm.*	*Cm.*		
155.6	6.6	4.4	160.2			164.5	8.9	5.7				168.4	3.9	2.4	170.6			151.
147.2	6.6	4.7													164.5			152.
146.3	4.3	3.0	149.0			153.4	7.1	4.9	159.0	10.0	6.7	161.5	8.1	5.3	170.0	11.0	6.9	153.
			154.0	4.4	2.9				161.7	7.7	5.0				171.4	9.7	6.0	154.
			158.5	5.1	3.3				160.5	2.0	1.3				161.5	1.0	.6	155.
145.3						150.6	5.3	3.6	154.9			160.0	9.4	6.2	165.6	10.7	6.9	156.
			161.1						165.1	4.0	2.5				167.1	2.0	1.2	157.
			146.2	4.6	3.2				153.6	7.4	5.1				160.9	7.3	4.8	158.
148.0	4.0	2.8				153.0	5.0	3.4										159.
153.7									165.3						170.5	5.2	3.1	160.
147.0	3.5	2.4				151.3	4.3	2.9				158.4	7.1	4.7				161.
154.9	7.9	5.4	161.1			164.2	9.3	6.0	167.7	6.6	4.1	168.9	4.7	2.9	172.9	5.2	3.1	162.
			162.6	9.7	6.3				168.0	5.4	3.3				171.2	3.2	1.9	163.
			164.0	8.8	5.7				166.9	2.9	1.8				169.1	2.2	1.3	164.
157.5	10.3	7.0				164.1	6.6	4.2				168.3	4.2	2.6				165.
162.6	6.4	4.1				164.6	2.0	1.2							165.8			166.
			162.7	8.8	5.7				167.3	4.6	2.8				169.5	2.2	1.3	167.
155.6	6.6	4.4				162.4	6.8	4.4				166.5	4.1	2.5				168.
161.9									171.6			172.7						169.
			153.2	4.8	3.2				158.2	5.0	3.3				168.2	10.0	6.3	170.
			159.0	4.0	2.6				164.2	5.2	3.3				166.9	2.7	1.6	171.
152.9	5.2	3.5				163.1	10.2	6.7				169.2	6.1	3.7				172.
			163.9	4.4	2.8													173.
155.2	5.5	3.7				165.7	10.5	6.8				171.5	5.8	3.5				174.
159.2	7.5	4.9				164.5	5.3	3.3				167.3	2.8	1.7				175.
	6.2	4.2		6.1	4.0		6.8	4.4		5.5	3.6		5.6	3.6		5.6	3.5	Av.
	1.4			2.0			2.0			1.7			1.7			3.2		Av.var.
153.5			158.3	9.8	6.6	166.6	13.1	8.5	167.6	9.3	5.9				172.7	5.1	3.0	176.
			159.0	9.0	6.0	165.6									175.2			177.
157.2									169.2			172.0						178.
			165.8	9.2	5.9				169.9	4.1	2.5				171.0	1.1	.7	179.
157.9	7.3	4.8				167.6	9.7	6.1				174.2	6.6	3.9				180.
			164.1	8.7	5.6				173.0	8.9	5.4				177.9	4.9	2.8	181.
												172.6						182.
			158.2	3.4	2.2				164.7	6.5	4.1				173.5	8.8	5.3	183.
158.7	7.3	4.8	164.6	9.5	6.1	167.8	9.1	5.7				174.5	6.7	4.0	177.0			184.
			169.8	9.1	5.7				175.3	5.5	3.2				177.4	2.1	1.2	185.
162.0			164.0												180.4	1.5	.8	186.
167.0	10.9	7.0	169.6									174.1			174.3			187.
167.1						171.3	4.2	2.5				173.8	2.5	1.5				188.
159.3	6.1	4.0				169.5	10.2	6.4				176.1	6.6	3.9				189.
			173.8	8.7	5.3				179.0	5.2	3.0				181.1	2.1	1.2	190.
163.9	6.6	4.2				173.1	9.2	5.6				177.7	4.6	2.7				191.
168.6	2.1	1.3				171.1	2.5	1.5				176.0	4.9	2.9				192.
167.1	5.6	3.5				171.4	4.3	2.6				173.4	2.0	1.2				193.
			172.4	9.5	5.8				180.4	8.0	4.6				183.0	2.6	1.4	194.
162.5						163.9	1.4	.9				164.9	1.0	.6				195.
159.5	3.9	2.5				166.3	6.8	4.3				176.0	9.7	5.8				196.
			172.3	7.0	4.2				177.5	5.2	3.0							197.
168.2	6.6	4.1				170.4	2.2	1.3				171.0	.6	.4				198.
						177.2						178.9	1.7	1.0				199.
168.4	5.0	3.1				177.5	9.1	5.4				182.6	5.1	2.9				200.
157.9	6.1	3.9	161.9	8.4	5.3	165.4	6.8	4.2	167.1	6.6	4.5	171.2	4.3	2.6	171.4	3.5	2.1	Av.
	1.6			1.3			3.2			1.6			2.3			2.1		Av.var.

TABLE 15.—*Increments of growth in weight for a group of*

[Weight and increment

No.	7 years.			7½ years.			8 years.			8½ years.			9 years.			9½ years.			10 years.		
	Weight.	Increment, 6-7 years.	Per cent gain.	Weight.	Increment, 6½-7½ years.	Per cent gain.	Weight.	Increment, 7-8 years.	Per cent gain.	Weight.	Increment, 7½-8½ years.	Per cent gain.	Weight.	Increment, 8-9 years.	Per cent gain.	Weight.	Increment, 8½-9½ years.	Per cent gain.	Weight.	Increment, 9-10 years.	Per cent gain.
1	41.9						44.5	2.6	6.2				46.4	1.9	4.2	46.3			48.5	2.1	5.4
2	39.2						45.1	5.9	15.0				46.6	1.5	3.3				53.2	6.6	14.0
3	55.3						55.5	.2	.4				62.6	7.1	13.0				63.4	.8	1.3
4				40.5						46.0	5.5	13.5	48.5						54.0	5.5	11.3
5				42.0									48.5			51.8					
6				41.0						44.2	3.2	7.8	45.7			48.9	4.7	10.6			
7				44.0						46.6	2.6	5.9				47.5	.9	1.9			
8				46.2						50.6	4.4	9.5				58.7	8.1	16.0			
9				48.0						54.3	6.3	13.1				63.5	9.2	16.9			
10	51.8						55.0	3.2	6.2				61.0	6.0	11.0				64.7	3.7	6.1
11				46.0	6.5	16.5				52.3	6.3	14.0				56.0	3.7	7.1			
12	45.8			48.0						52.5	4.5	9.4				60.6	8.1	15.4			
13				46.3			47.8			50.3	4.0	8.6	52.7	4.9	10.3	54.5	4.2	8.3			
14	42.9			45.0															53.0		
15				46.5	3.5	8.1	47.8			50.1	3.6	7.7	54.3	6.5	13.6				61.0	6.7	12.3
16	43.3	6.3	1.6				46.6	3.3	7.6				51.0	4.4	9.4				57.2	6.2	12.2
17	57.5						62.3	4.8	8.4				64.8	2.5	4.0				[1]53.9	[1]9.1	[1]14.0
18				40.5	4.7	13.1				45.9	5.4	13.3				50.8	4.9	10.7			
19	44.0			44.0									51.5			52.8			52.9	1.4	2.7
20	47.0									55.3						59.5	4.2	7.6			
21	50.5						56.8	6.3	12.5	57.2						64.5			68.5		
22				48.0			52.0						57.3	5.3	10.2				61.0	3.7	6.5
23				48.0	1.0	2.1				48.8	.8	1.7				50.0	1.2	2.5	52.5		
24				55.5			61.0						62.5	1.5	2.5				72.0	9.5	15.2
25	50.0						54.5	4.5	9.0				63.6	9.1	16.6				75.3	11.7	18.4
Av.		6.3	1.6		3.9	10.0		3.9	8.2		4.2	10.4		4.6	8.9		4.9	9.7		5.6	10.0
Av. var.		.0			1.7			1.5			1.3			1.9			2.1			2.7	
26	45.3						49.5	4.2	9.3				55.7	6.2	12.5				61.2	5.5	9.9
27				50.3			48.0			51.0	.7	1.4	51.2	3.2	6.7	55.3	4.3	8.4			
28	55.1			55.0			51.3	−3.8	−6.9				62.3	11.0	21.4	64.5			66.1		
29				46.0						50.5	4.5	9.8				58.0	7.5	14.9	63.5		
30	48.5						54.0	5.5	11.3				57.0	3.0	5.6				68.0	11.0	19.3
31				51.5	3.2	6.6				59.5	8.0	15.5				66.0	6.5	10.9			
32	52.3						53.5	1.2	2.3				57.6	4.1	7.7	61.0					
33				53.0	4.7	9.7				67.5	14.5	27.4				74.4	6.9	10.2			
34	54.0						60.6	6.6	12.2	63.0						66.0	3.0	4.8			
35				42.5			49.6						56.5	6.9	13.9				61.6	5.1	9.0
36				53.5	3.7	7.4				58.0	4.5	8.4				62.5	4.5	7.8	70.2		
37				50.5			55.5						62.0	6.5	11.8				67.7	5.7	9.2
38				53.5						58.7	5.2	9.7				66.6	7.9	13.4			
39				63.0						72.3	9.3	14.8				83.9	11.6	14.6			
40	56.3												67.8						71.0	3.2	4.7
41	52.9			52.9			59.5	6.6	12.5	61.7	8.8	16.6	64.0	4.5	7.6				67.7	3.7	5.8
42				52.5						60.0	7.5	14.3				72.0	12.0	20.0			
43	52.9			59.4			58.0	5.1	9.6				60.0	2.0	3.4				63.8	3.8	6.3
44				58.0			62.7			63.9	5.9	10.2	67.2	4.5	7.2				76.6	9.4	14.0
45				52.2	3.4	7.0				57.6	5.4	10.3				62.7	5.1	8.9			
46				67.5	4.0	6.3				76.0	8.5	12.6				88.0	12.0	15.8			
47				56.8						67.5	10.7	18.8				81.2	13.7	20.3			
48				48.8	2.8	6.1	50.5			51.8	3.0	6.2	55.3	4.8	9.5	57.1	5.3	10.2			
49	54.5						59.5	5.0	9.2				77.7	18.2	30.6				85.4	7.7	9.8
50	60.0			72.6	8.5	13.1	79.7	10.7	15.5	83.0	10.4	14.3							101.0		
Av.	50.5			50.5	4.3	8.0	54.7	4.6	8.8	57.1	7.1	12.8	57.5	6.2	11.5	61.5	7.7	12.4	64.8	6.1	10.9
Av. var.					1.3			2.6			2.7			2.9			2.9			2.2	

[1] Decrease.

50 girls with consecutive measurements, from 7 to 13 years of age.

expressed in pounds.]

10½ years.			11 years.			11½ years.			12 years.			12½ years.			13 years.			No.
Weight.	Increment, 9½–10½ years.	Per cent gain.	Weight.	Increment, 10–11 years.	Per cent gain.	Weight.	Increment, 10½–11½ years.	Per cent gain.	Weight.	Increment, 11–12 years.	Per cent gain.	Weight.	Increment, 11½–12½ years.	Per cent gain.	Weight.	Increment, 12–13 years.	Per cent gain.	
51.4	5.1	1.1				57.0	5.6	10.9	62.8			65.5	8.5	14.9	74.5	11.7	18.6	1.
			56.5	3.3	6.2				68.6	12.1	21.4				77.2	8.6	12.5	2.
			83.6	20.2	30.3				82.9	−.7	−.8				84.7	1.8	2.2	3.
			58.0	4.0	7.4				65.3	7.3	12.6				76.6	11.3	17.3	4.
57.3	5.5	10.6				64.0	6.7	11.7				76.6	12.6	19.7				5.
48.8	−.1	−2.0							59.5						64.0	4.5	7.6	6.
57.7	10.2	21.5				55.0	−2.7	−4.7										7.
64.5	5.8	9.9				83.2	18.7	28.9				90.4	7.2	8.6				8.
68.2	4.7	7.4				75.2	7.1	10.4				85.4	10.2	10.3				9.
			74.4	9.7	15.0				82.9	8.5	11.4				84.2	1.3	1.6	10.
60.5	4.5	8.0				68.4	7.9	13.1				78.8	10.4	15.2				11.
						78.1												12.
61.0	6.5	12.0	59.0			63.8	2.8	4.6	72.5	13.5	2.3	74.5	10.7	15.2	85.0	12.5	17.2	13.
55.1			60.5	7.5	14.2				65.5	5.0	8.3				74.9	9.4	14.4	14.
			65.5	4.5	7.4	71.8			82.3	16.8	25.6	85.3	13.5	18.8	95.0	12.7	15.4	15.
			64.5	7.3	12.8				72.4	7.9	12.2				86.9	14.5	20.0	16.
			77.2	23.3	43.2				86.2	9.0	11.6							17.
56.9	6.1	12.0				64.0	7.1	12.5				75.9	11.9	18.6				18.
57.9	5.1	9.7	58.8	5.9	11.2				70.0	11.2	19.0	73.5			81.3	11.3	16.1	19.
73.0			84.0						100.1						117.2			20.
69.5	5.0	7.7	74.5	6.0	8.8	77.8	8.3	11.9	84.8	10.3	13.8	87.5	9.7	12.5	102.8	18.0	21.2	21.
			71.1	10.1	16.6				79.2	8.1	11.4				89.3	10.1	12.7	22.
			62.0	9.5	18.1				71.1	9.1	14.7				85.9	14.8	20.9	23.
			76.1	4.1	5.7				79.8	3.7	4.9				102.7	22.9	28.6	24.
			84.0	8.7	11.4	98.6			101.4	17.4	20.7				116.6	15.2	14.9	25.
	5.3	8.9		8.9	14.3		6.8	11.0		9.5	2.6		10.5	14.9		11.4	15.2	Av.
	1.4			4.2			3.3			3.7			1.5			4.2		Av. var.
			67.1	6.0	9.8				78.8	11.7	17.4				95.7	16.9	21.4	26.
59.5	4.2	7.6	61.0									68.2			69.9			27.
72.8	8.3	12.9	83.1	17.0	25.7				87.5	4.4	5.3	92.3			96.2	7.7	8.9	28.
			71.5	8.0	12.6				82.8	10.8	15.1				101.2	18.9	23.0	29.
			81.5	13.5	19.9				94.2	12.7	15.6	106.9						30.
75.0	9.0	13.6				81.4	6.4	8.5				88.4	7.0	8.6				31.
70.6	9.6	15.7	73.0						86.4	13.4	18.4	96.0						32.
76.8	2.4	3.2				91.7	14.9	19.4				98.5	6.8	7.4				33.
75.0	9.0	13.6				86.0	11.0	14.7				99.0	13.0	15.1				34.
			63.8	2.2	3.6				75.2	11.4	17.9				78.3	3.1	4.1	35.
			73.5	3.3	4.7	76.5						87.3	10.8	14.1	90.4			36.
			73.7	6.0	8.9				81.6	7.9	10.7				91.0	9.4	11.5	37.
71.1	4.5	6.8				87.6	16.6	23.3				103.8	16.2	18.5				38.
95.3	11.4	13.6										127.6						39.
			77.4	6.4	9.0				85.4	8.0	10.3				92.8	7.4	8.7	40.
72.0			75.3	7.6	11.2	82.0	10.0	13.9	86.2	10.9	14.5				101.8	15.6	18.1	41.
73.0	1.0	1.4				85.4	12.4	17.0				96.0	9.6	11.2				42.
			68.6	5.2	8.2				82.5	13.9	20.3	89.0						43.
			85.8	9.2	2.0	92.8			97.5	11.7	12.6	99.7	6.9	7.4				44.
71.0	8.3	13.2				80.5	9.5	13.4				88.4	7.9	9.8				45.
99.2	11.2	12.7				116.1	16.9	17.0				121.7	5.6	4.8				46.
94.2	13.0	16.1				104.5	10.3	10.9				124.9	20.4	19.5				47.
59.5	2.4	4.2	63.5			64.0	4.5	7.6	71.8	8.3	13.1							48.
			94.6	9.2	10.8				104.1	9.5	10.0				117.0	12.9	11.0	49.
						137.6			147.9									50.
68.4	7.2	10.4	71.7	7.8	10.5	74.0	11.3	14.6	82.8	10.3	13.9	91.5	10.4	11.6	90.5	11.5	13.3	Av.
	3.4			3.0			3.2			2.1			3.7			4.4		Av. var.

TABLE 16.—*Increments of growth in weight for a group of 50*

[Weight and increment

No.	12 years.			12½ years.			13 years.			13½ years.			14 years.			14½ years.		
	Weight.	Increment, 11-12 years.	Per cent gain.	Weight.	Increment, 11½-12½ years.	Per cent gain.	Weight.	Increment, 12-13 years.	Per cent gain.	Weight.	Increment, 12½-13½ years.	Per cent gain.	Weight.	Increment, 13-14 years.	Per cent gain.	Weight.	Increment, 13½-14½ years.	Per cent gain.
51	49.8			53.0						60	7.0	13.2				72.5	12.5	20.8
52	77.0	8.5	12.4				88.4	11.4	14.8				97.9	9.5	10.7	80.7	16.7	26.1
53				57.0						64.0	7.0	12.3						
54				60.0	5.0	9.1	65.5						78.0	12.5	19.1			
55				58.0	4.5	8.4	60.3						69.0	8.7	14.4	92.8	5.8	6.6
56	66.8	2.3	3.6	70.5						87.0	16.5	23.4				80.5	[1]6.5	[1]7.5
57	61.7	6.7	12.2	68.3	16.6	10.7	63.7	2.0	3.2				73.7	10.0	15.7	101.6	11.0	12.0
58				76.3	14.8	24.1				90.6	14.3	18.6						
59	71.0	9.7	15.8				85.0	14.0	19.7				90.0	5.0	5.5			
60	83.0	4.4	5.6				92.5	9.5	11.4	107.5						118.2	10.7	10.3
61	110.0	13.5	14.0				122.8	12.8	11.6				132.0	9.2	7.5			
62	64.7	3.7	6.1	69.9	2.8	4.2				84.0	14.1	20.2	88.1					
63	64.8						77.3	12.5	19.3	83.8			85.9	8.6	11.1	90.9	7.1	8.4
64	65.5	10.4	18.9				79.0	13.5	20.6	85.5			90.4	11.4	14.4	93.0	7.5	8.7
65				73.3	5.3	7.8	80.5						94.0	13.5	16.7			
66	79.8	11.5	16.8				94.5	14.7	18.4	107.8			113.8	19.3	20.5	126.5	18.7	17.3
67										104.0			111.3					
68	70.0	3.5	5.3	75.0						82.0	7.0	9.3				102.9	20.9	25.5
69	73.0									82.5						94.0	11.5	13.8
70				78.1	7.7	10.9				98.1	20.0	25.6				110.0	11.9	12.1
71	79.5						92.8	13.3	16.7				110.0	17.2	18.3			
72	76.0	5.0	7.0				86.9	10.9	14.3				96.4	9.5	10.9			
73	95.0	17.0	21.8				107.8	12.8	13.5				116.2	8.4	7.7	111.8	− .7	− .6
74				104.0						112.5	8.5	8.1						
75	88.0	13.0	17.3				96.8	8.8	10.0				102.6	5.8	5.9			
Av.		18.4	12.1		8.1	10.7		11.4	14.4		11.8	16.4		10.6	12.7		9.8	1.8
Av. var.		3.8			4.3			2.4			4.4			3.0			5.5	
76	80.3						95.5	15.2	18.9				107.4	11.9	12.5			
77	72.3	6.3	9.5				83.8	11.5	15.9				90.2	6.4	7.6			
78	66.6	7.6	12.9				75.5	8.9	13.4	84.3						97.0	12.7	15.0
79				78.0	10.0	14.7				90.4	12.4	15.9				102.7	12.3	13.6
80				76.8	10.7	16.2				79.4	2.6	3.4	83.7			86.0	6.6	8.3
81	100.3						104.0	3.7	3.6				126.0	22.0	21.1			
82	67.8	3.9	6.1				83.0	15.2	22.4	86.5			91.6	8.6	10.4	99.8	13.3	15.3
83	69.4	9.6	16.1				77.2	7.8	11.2	85.6			89.9	12.7	16.4			
84	97.0						119.0	22.0	22.7				127.2	8.2	6.9			
85	66.7												83.0			85.7		
86	79.3	6.3	8.6				93.2	13.9	17.5				103.4	10.2	10.9			
87				73.5	4.7	6.8	81.8						96.5	14.7	17.9			
88							109.3						123.6	14.3	13.0	123.0		
89	79.5	4.0	5.3				90.4	10.9	13.7							103.5		
90				86.5	12.0	16.1				104.9	18.4	21.3				120.6	15.7	14.9
91				88.3						105.5	17.2	19.4	107.8			121.3	15.8	15.9
92	92.8	10.8	13.2				104.8	12.0	12.0				115.0	10.2	9.7	120.0		
93	117.0			120.5			123.3	6.3	5.4	119.5	−1.0	− .8	125.8	2.5	2.0			
94				102.3	20.3	24.8				101.5	− .8	− .7	118.0					
95	94.0	18.7	9.4				105.4	11.4	12.1				116.4	11.0	10.4			
96	96.5	8.3	9.4				109.3	12.8	13.3	114.8			112.4	3.1	2.8	115.9	1.1	1.0
97	83.8						98.0	14.2					112.2	14.2	14.4			
98				127.0						147.8	20.8	16.4				162.1	14.3	9.6
99				105.5	11.2	11.9				110.2	4.7	4.6				111.5	1.3	1.1
100				103.3	11.3	12.3				124.3	21.0	20.3				135.0	10.7	8.6
Av.	79.3	8.4	10.1	82.	11.5	14.7	91.8	11.8	14.0	96.4	11.8	11.3	102.3	10.7	11.1	105.8	10.4	10.3
Av. var.		3.1			2.9			3.2			8.1			3.7			4.4	

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[1] Decrease.

girls with consecutive measurements, from 12 to 17 years of age.

expressed in pounds.]

15 years.			15½ years.			16 years.			16½ years.			17 years.			No.
Weight.	Increment, 14–15 years.	Per cent gain.	Weight.	Increment, 14½–15½ years.	Per cent gain.	Weight.	Increment, 15–16 years.	Per cent gain.	Weight.	Increment, 15½–16½ years.	Per cent gain.	Weight.	Increment, 16–17 years.	Per cent gain.	
......	......	......	73.0	0.5	0.6	77.4	......	......	80.3	7.3	10.0	......	......	......	51.
117.3	19.4	19.8	......	......	......	121.0	3.7	3.2	......	......	......	122.3	1.3	1.1	52.
......	......	......	87.6	6.9	8.5	......	......	......	......	......	......	103.4	......	......	53
97.2	19.2	24.5	......	......	......	101.2	4.0	4.1	......	......	......	99.9	−1.3	−1.3	54.
79.6	10.6	15.4	......	......	......	84.9	5.3	6.6	......	......	......	93.0	8.1	9.5	55.
......	......	......	104.0	11.2	12.0	......	......	......	115.5	11.5	11.0	......	......	......	56.
85.9	12.2	16.5	87.2	6.7	8.3	97.0	11.1	12.6	......	......	......	100.0	3.0	3.3	57.
......	......	......	103.8	2.2	2.1	......	......	......	111.3	7.5	7.2	......	......	......	58.
93.5	3.5	3.1	......	......	......	90.2	− 3.3	−3.5	......	......	......	94.4	4.2	4.6	59.
......	......	......	118.3	.1	.1	......	......	......	115.2	− 3.1	−2.6	......	......	......	60.
145.9	13.9	10.5	......	......	......	144.1	− 1.8	−1.3	......	......	......	......	......	......	61.
98.0	9.9	10.1	103.5	......	......	......	......	......	112.5	9.0	8.6	114.2	......	......	62.
96.2	10.3	11.9	......	......	......	100.5	4.3	4.4	98.5	......	......	......	......	......	63.
97.4	7.0	7.7	......	......	......	106.0	8.6	8.8	107.0	......	......	112.3	6.3	5.9	64.
95.0	1.0	1.1	......	......	......	100.1	5.1	5.3	......	......	......	97.2	−2.9	−2.8	65.
123.8	10.0	8.7	132.3	5.8	4.6	136.3	12.5	10.0	140.0	7.7	5.8	148.0	11.7	8.6	66.
......	......	......	111.7	......	......	......	......	......	117.2	5.5	4.9	......	......	......	67.
......	......	......	113.3	10.4	10.1	......	......	......	126.0	12.7	11.2	......	......	......	68.
104.8	......	......	......	......	......	113.2	9.4	8.9	......	......	......	113.9	.7	.6	69.
......	......	......	111.1	1.1	1.0	......	......	......	113.8	2.2	2.0	......	......	......	70.
115.5	5.5	5.0	......	......	......	127.2	11.7	10.1	......	......	......	127.2	.0	.0	71.
111.5	15.1	15.6	......	......	......	112.6	1.1	.9	......	......	......	117.9	5.3	4.7	72.
113.0	−3.2	−2.7	......	......	......	112.4	− .6	− .5	......	......	......	107.4	−5.0	−4.4	73.
......	......	......	131.1	19.3	10.7	......	......	......	121.0	−10.1	−7.7	......	......	......	74.
109.1	6.5	6.3	......	......	......	112.9	2.7	2.4	......	......	......	119.2	6.4	5.6	75.
......	9.4	10.2	......	6.4	5.8	......	4.9	4.8	......	5.0	5.0	......	2.9	2.7	Av.
......	4.8	......	......	4.5	......	......	3.9	......	......	5.2	......	......	3.8	......	Av. var.
119.2	11.8	10.9	......	......	......	125.0	5.8	4.8	......	......	......	128.3	3.3	2.6	76.
106.9	16.7	88.4	......	......	......	......	......	......	......	......	......	118.8	......	......	77.
100.8	......	......	105.7	8.7	8.9	103.3	2.5	2.5	104.8	− .9	− .8	......	......	......	78.
......	......	......	110.2	7.5	7.3	......	......	......	120.6	10.4	9.4	......	......	......	79.
......	......	......	106.0	20.0	23.2	......	......	......	116.3	10.3	9.7	......	......	......	80.
138.3	12.3	9.8	132.6	......	......	125.4	−12.9	−9.7	......	......	......	134.9	9.4	7.5	81.
103.2	11.6	12.6	......	......	......	104.0	.8	7.7	103.5	......	......	105.5	1.5	1.5	82.
100.8	10.9	12.1	......	......	......	109.6	8.8	8.7	......	......	......	119.2	9.6	8.7	83.
130.7	3.5	2.7	......	......	......	124.7	− 6.0	−4.5	......	......	......	119.2	−5.5	−4.3	84.
91.2	8.2	9.9	......	......	......	......	......	......	100.7	......	......	......	......	......	85.
110.6	7.2	7.5	......	......	......	123.8	13.2	11.9	......	......	......	127.1	3.3	2.7	86.
103.0	6.5	6.7	......	......	......	108.0	5.0	4.8	......	......	......	109.1	1.1	1.0	87.
123.5	− .1	− .1	126.9	3.9	3.2	......	......	......	133.0	6.1	4.8	132.0	......	......	88.
104.0	......	......	......	......	......	113.0	9.0	8.6	......	......	......	121.3	8.3	7.3	89.
......	......	......	119.9	− .7	− .6	......	......	......	125.0	5.1	4.2	129.5	......	......	90.
123.1	15.3	14.2	127.8	6.5	5.3	......	......	......	131.0	3.2	2.5	......	......	......	91.
......	......	......	......	......	......	127.3	......	......	128.0	......	......	......	......	......	92.
......	......	......	......	......	......	137.5	......	......	135.0	......	......	137.0	......	......	93.
126.7	8.7	7.4	......	......	......	......	......	......	139.0	......	......	......	......	......	94.
124.5	8.1	6.9	124.3	......	......	......	......	......	130.9	6.6	5.3	120.5	−3.0	−2.5	95.
121.3	8.9	7.9	124.9	9.0	7.7	123.5	2.2	1.8	116.3	− 6.6	5.3	139.3	15.8	11.8	96.
126.0	13.8	12.3	......	......	......	133.1	7.1	5.6	......	......	......	......	......	......	97.
......	......	......	167.9	5.8	3.6	......	......	......	180.4	12.5	7.4	......	......	......	98.
......	......	......	111.5	.0	.0	......	......	......	121.7	10.2	9.1	......	......	......	99.
......	......	......	133.5	−1.5	−1.1	......	......	......	129.8	− 3.7	−2.7	......	......	......	100.
110.2	9.6	9.3	115.3	5.9	5.8	113.6	3.2	3.9	116.9	4.8	4.9	117.7	4.4	3.6	Av.
......	3.4	......	......	4.4	......	......	5.9	......	......	5.0	......	......	5.1	......	Av. var.

TABLE 17.—*Increments of growth in weight for a group of 50*

[Weight and increment

No.	7 years.			7½ years.			8 years.			8½ years.			9 years.			9½ years.			10 years.		
	Weight.	Increment, 6-7 years.	Per cent gain.	Weight.	Increment, 6½–7½ years.	Per cent gain.	Weight.	Increment, 7-8 years.	Per cent gain.	Weight.	Increment, 7½–8½ years.	Per cent gain.	Weight.	Increment, 8-9 years.	Per cent gain.	Weight.	Increment, 8½–9½ years.	Per cent gain.	Weight.	Increment, 9-10 years.	Per cent gain.
101	42.5						48.4	5.9	13.9	47.1			51.4	3.0	6.2	53.0	5.9	12.5	54.3	2.9	5.6
102				38.6						43.0	4.4	11.4				44.3	1.3	3.0			
103	41.8	3.3	8.6				44.4	2.6	6.2				49.1	4.7	10.6				53.0	3.9	7.9
104				43.0	3.5	8.9				45.4	2.4	5.6				50.7	5.3	11.7			
105				46.2						49.7	3.5	7.6				56.1	6.4	12.9			
106	37.5						42.3	4.8	12.8				46.0	3.7	8.7				48.7	2.7	5.9
107				46.3						44.0	−2.3	−5.0				49.3	5.3	12.0			
108							45.0						50.5	5.5	12.2				54.8	4.3	8.5
109	44.4			46.3	2.3	5.2	46.3	1.9	4.3	47.4	1.1	2.4				53.0	5.6	11.8	54.8		
110							48.5						53.0	4.5	9.3				62.2	9.2	17.4
111				41.8			46.8						52.1	5.3	11.3				55.2	3.1	6.0
112	43.0	4.7	12.3				47.5	4.5	10.5				52.6	5.1	10.7				57.6	5.0	9.5
113	47.5						52.3	4.8	10.2				57.8	5.5	10.5	61.8					
114	42.0	5.5	15.1				47.5	5.5	13.1				53.0	5.5	11.6				57.2	4.2	7.9
115				47.8	6.8	16.6				53.5	5.7	11.9				58.0	4.5	8.4			
116	47.0						52.0	5.0	10.6				63.3	11.3	21.7				66.5	3.2	5.6
117	41.9						44.1	2.2	5.3										51.5		
118				47.0	2.0	4.4				51.0	4.0	8.5				54.5	3.5	6.9	59.9		
119				53.9						57.2	3.3	6.1				62.0	4.8	8.4			
120				46.0	6.0	15.0				48.8	2.8	6.1				53.9	5.1	10.5			
121				44.0						48.0	4.0	9.1				51.7	3.7	7.7			
122	48.0									52.0						55.0	3.0	5.8			
123				44.5						49.5	5.0	11.2				54.6	5.1	10.3			
124				49.6	3.1	6.7				56.8	7.2	14.5	57.7			59.4	2.6	4.6			
125							58.3						67.1	8.8	15.1				74.0	6.9	10.3
Av.		4.5	12.0		4.0	9.5		4.1	9.7		3.4	7.5		5.7	11.6		4.4	9.0		4.5	8.5
Av.var		.8			1.7			1.3			1.6			1.6			1.2			1.5	
126	53.0						62.0	9.0	17.0				65.5	3.5	5.6				80.0	14.5	22.1
127	50.8						53.0	2.2	4.3				59.5	6.5	12.3				66.0	6.5	10.9
128	49.0						57.0	8.0	16.3				65.4	8.4	14.7				72.5	7.1	10.9
129				56.8						64.0	7.2	12.7				60.9	5.9	9.2			
130	57.3			61.5									65.4			68.0			71.4	6.0	9.2
131	55.0									60.0						67.5	7.5	12.5			
132				52.0									58.0			59.3					
133	65.6						76.0	10.4	15.9				80.5	4.5	5.9	87.3					
134				48.5			57.8														
135				49.1						58.7	9.6	19.6				62.3	3.6	6.1			
136				50.8	7.0	16.0	53.0						58.0	5.0	9.4				65.1	7.1	12.2
137				55.2									57.2			60.0					
138	51.7						57.4	5.7	11.0				65.8	8.4	14.6				74.6	8.8	13.4
139				54.5			63.8						66.7	2.9	4.5	62.5					
140				56.8						63.6	6.8	12.0				70.2	6.6	10.4			
141				55.5						62.4	6.9	12.4				67.7	5.3	8.5			
142				59.5	3.2	5.7	69.1			76.2	16.7	28.1							93.3		
143	49.0			55.8						65.0	9.2	16.5							72.8		
144				56.0						62.0	6.0	10.7				70.0	8.0	12.9			
145				55.3	4.3	8.4				63.5	8.2	14.8				70.0	6.5	10.2			
146	61.6						70.6	9.0	14.6				79.6	9.0	12.7	80.7			88.7	9.1	11.4
147	63.0	8.0	14.5				65.5	2.5	4.0				72.5	7.0	10.7				83.2	10.7	14.8
148	55.0			57.0									63.5			67.5			70.2	6.7	10.6
149				69.0						74.0	5.0	7.2				84.0	10.0	13.5			
150	77.0	14.5	23.2				72.1	−4.9	−6.4										84.3		
Av.	46.9	11.3	18.9	51.3	4.8	10.0	54.2	5.2	9.6	55.9	8.4	14.9	60.4	6.1	10.0	62.1	6.7	10.4	66.9	8.5	12.8
Av.var		3.3			1.4			4.0			2.3			1.9			1.4			2.0	

boys with consecutive measurements, from 7 to 13 years of age.

expressed in pounds.]

10½ years.			11 years.			11½ years.			12 years.			12½ years.			13 years.			
Weight.	Increment, 9½–10½ years.	Per cent gain.	Weight.	Increment, 10–11 years.	Per cent gain.	Weight.	Increment, 10½–11½ years.	Per cent gain.	Weight.	Increment, 11–12 years.	Per cent gain.	Weight.	Increment, 11½–12½ years.	Per cent gain.	Weight.	Increment, 12–13 years.	Per cent gain.	No.
......	....	....	55.4	1.1	2.0	58.0	....	....	62.0	6.6	11.9	62.0	4.0	6.9	67.5	5.5	8.9	101.
49.0	4.7	10.6	......	....	....	53.8	4.8	9.8	......	....	....	55.7	1.9	3.5	......	....	....	102.
......	....	....	57.2	4.2	7.9	......	....	....	60.3	3.1	5.4	......	....	....	......	....	....	103.
54.6	3.9	7.7	......	....	....	59.8	5.2	9.5	......	....	....	64.5	4.7	7.9	......	....	....	104.
60.1	4.0	7.1	......	....	....	70.4	10.3	17.1	......	....	....	78.5	8.1	11.5	......	....	....	105.
......	....	....	53.0	4.3	8.8	......	....	....	56.1	3.1	5.8	......	....	....	64.0	7.9	14.1	106.
65.6	6.3	12.8	......	....	....	67.9	2.3	4.1	......	....	....	......	....	....	......	....	....	107.
......	....	....	57.4	2.6	4.7	......	....	....	62.6	5.2	9.0	......	....	....	67.9	5.3	8.5	108.
......	....	....	......	....	....	58.8	....	....	68.5	....	....	74.0	15.2	25.9	75.0	....	....	109.
......	....	....	64.1	1.9	3.1	......	....	....	68.9	4.8	7.5	......	....	....	78.3	9.4	13.6	110.
......	....	....	58.9	3.7	6.7	......	....	....	64.5	5.6	9.5	......	....	....	70.1	5.6	8.7	111.
......	....	....	62.5	4.9	8.5	......	....	....	67.1	4.6	7.4	......	....	....	72.2	5.1	7.6	112.
65.8	4.0	6.5	......	....	....	72.6	6.8	10.3	......	....	....	86.2	13.6	18.7	......	....	....	113.
......	....	....	65.3	8.1	14.2	......	....	....	......	....	....	......	....	....	79.4	....	....	114.
61.6	3.6	6.2	......	....	....	67.8	6.2	10.1	......	....	....	76.3	8.5	12.5	......	....	....	115.
......	....	....	75.0	8.5	12.8	......	....	....	86.0	11.0	14.7	......	....	....	100.5	14.5	16.9	116.
......	....	....	54.0	2.7	5.2	56.9	....	....	......	....	....	60.5	3.6	6.3	56.0	....	....	117.
......	....	....	59.8	−.1	−.2	......	....	....	66.4	6.6	11.0	......	....	....	71.3	4.9	7.4	118.
69.3	7.3	12.1	......	....	....	74.1	4.8	6.1	......	....	....	......	....	....	......	....	....	119.
60.3	6.4	11.9	......	....	....	66.7	6.4	10.6	......	....	....	......	....	....	......	....	....	120.
56.1	4.4	8.5	......	....	....	59.8	3.7	6.6	......	....	....	64.9	5.1	8.5	......	....	....	121.
58.5	3.5	6.4	......	....	....	......	....	....	......	....	....	77.4	....	....	......	....	....	122.
58.1	3.5	6.4	......	....	....	64.9	6.8	11.7	......	....	....	67.1	2.2	3.4	......	....	....	123.
63.8	4.4	7.4	68.0	....	....	......	....	....	75.0	7.0	10.3	......	....	....	86.0	11.0	14.7	124.
......	....	....	82.7	8.7	11.8	......	....	....	83.8	1.1	1.3	......	....	....	101.2	17.4	20.5	125.
......	4.7	8.6	......	4.2	7.1	......	5.7	9.0	......	5.3	8.5	......	6.7	10.5	......	8.7	12.0	Av.
......	1.0	....	......	2.2	....	......	1.6	....	......	1.8	....	......	3.7	....	......	3.5	....	Av. var.
......	....	....	88.0	8.1	10.1	93.7	....	....	......	....	....	107.4	13.7	14.6	......	....	....	126.
......	....	....	70.2	4.2	6.4	......	....	....	76.8	6.6	9.4	......	....	....	86.0	9.2	12.0	127.
......	....	....	86.2	13.7	18.9	......	....	....	99.7	13.5	15.7	......	....	....	114.2	14.5	14.5	128.
75.8	5.9	8.4	......	....	....	79.0	3.2	4.2	......	....	....	88.0	9.0	11.4	......	....	....	129.
74.9	6.9	10.1	80.6	9.2	11.3	......	....	....	90.6	10.0	12.4	98.3	....	....	......	....	....	130.
82.0	14.5	21.5	93.4	....	....	......	....	....	97.4	4.0	4.3	......	....	....	113.7	15.3	15.7	131.
63.5	4.2	7.1	......	....	....	69.5	6.0	9.4	......	....	....	75.2	5.7	8.2	......	....	....	132.
96.3	9.0	10.2	......	....	....	113.5	17.2	17.9	......	....	....	116.8	3.3	2.9	......	....	....	133.
68.0	....	....	72.4	....	....	76.0	8.0	11.8	77.2	4.8	6.6	80.0	4.0	5.3	......	....	....	134.
69.5	7.2	11.6	......	....	....	78.1	8.6	12.4	......	....	....	......	....	....	......	....	....	135.
......	....	....	73.0	7.9	12.1	......	....	....	78.5	5.5	7.5	......	....	....	......	....	....	136.
69.3	9.3	15.5	......	....	....	76.3	7.0	10.1	......	....	....	86.0	9.7	12.7	......	....	....	137.
......	....	....	83.6	9.0	12.1	......	....	....	95.9	12.3	14.7	......	....	....	......	....	....	138.
......	....	....	78.3	....	....	......	....	....	83.0	4.7	6.0	85.0	....	....	90.0	7.0	8.4	139.
89.6	17.4	24.8	......	....	....	87.1	−2.5	−2.8	......	....	....	......	....	....	......	....	....	140.
75.2	7.5	11.1	......	....	....	84.7	9.5	12.6	......	....	....	87.8	3.1	3.7	......	....	....	141.
99.5	....	....	100.0	6.7	7.2	107.0	7.5	7.5	119.0	19.0	19.0	125.0	18.0	16.8	140.0	21.0	17.6	142.
75.9	....	....	......	....	....	86.5	10.6	14.0	......	....	....	89.8	3.3	3.8	......	....	....	143.
74.6	4.4	6.3	......	....	....	83.6	9.0	12.0	......	....	....	101.2	17.6	21.1	......	....	....	144.
78.1	8.1	11.6	......	....	....	86.5	8.4	10.8	......	....	....	96.4	9.9	11.5	......	....	....	145.
90.9	10.2	12.6	97.9	9.2	10.4	......	....	....	110.7	12.8	13.1	......	....	....	133.1	22.4	20.2	146.
......	....	....	88.0	4.8	5.8	......	....	....	95.3	7.3	8.3	......	....	....	108.0	12.7	13.3	147.
72.5	5.0	7.4	77.7	7.5	10.7	......	....	....	85.8	8.1	10.4	90.0	....	....	......	....	....	148.
86.4	2.4	2.9	......	....	....	95.4	9.0	10.4	......	....	....	107.8	12.4	13.0	......	....	....	149.
86.0	....	....	90.6	6.3	7.5	......	....	....	94.8	4.2	4.6	......	....	....	105.8	11.0	11.6	150.
71.4	8.0	11.5	73.5	7.9	10.2	75.5	7.8	10.1	81.0	8.7	10.1	84.6	9.0	10.4	89.5	14.1	14.2	Av.
......	2.9	....	......	1.8	....	......	2.5	....	......	3.8	....	......	4.4	....	......	4.2	....	Av. var.

TABLE 18.—*Increments of growth in weight for a group of 50*

[Weight and increment

No.	12 years.			12½ years.			13 years.			13½ years.			14 years.		
	Weight.	Increment, 11–12 years.	Per cent gain.	Weight.	Increment, 11½–12½ years.	Per cent gain.	Weight.	Increment, 12–13 years.	Per cent gain.	Weight.	Increment, 12½–13½ years.	Per cent gain.	Weight.	Increment, 13–14 years.	Per cent gain.
151	64.8	......	......	66.3	......	......	......	......	......	87.5	21.2	32.0	......	......	......
152	67.0	......	......	......	......	......	72.0	5.0	7.5	77.2	......	......	......	......	......
153	61.0	......	......	61.9	......	......	68.2	7.2	11.8	68.1	6.2	10.0	......	......	......
154	66.0	......	......	......	......	......	83.0	17.0	25.8	......	......	......	84.3	1.3	1.6
155	62.0	5.7	10.1	......	......	......	75.9	13.9	22.4	......	......	......	92.2	16.3	21.5
156	......	......	......	64.0	......	......	68.0	......	......	......	......	......	75.7	7.7	11.3
157	72.8	1.7	2.4	......	......	......	80.1	7.3	10.0	......	......	......	......	......	......
158	......	......	......	......	......	......	68.1	......	......	......	......	......	71.6	3.5	5.1
159	74.5	......	......	......	......	......	81.8	7.3	9.8	86.6	......	......	......	......	......
160	62.0	......	......	......	......	......	67.5	5.5	8.9	......	......	......	73.3	5.8	8.6
161	......	......	......	75.4	......	......	......	......	......	81.8	6.4	8.5	......	......	......
162	......	......	......	67.4	−0.4	−0.6	......	......	......	76.5	9.1	13.5	......	......	......
163	58.6	.3	.5	......	......	......	68.0	9.4	16.0	......	......	......	83.4	15.4	22.6
164	77.0	......	......	......	......	......	85.0	8.0	10.4	......	......	......	97.5	12.5	14.7
165	......	......	......	77.1	8.2	11.9	......	......	......	88.0	10.9	14.1	......	......	......
166	70.0	3.0	4.4	......	......	......	84.0	14.0	20.0	95.7	......	......	......	......	......
167	......	......	......	71.6	3.1	4.5	......	......	......	80.5	8.9	12.4	87.6	......	......
168	70.5	......	......	74.0	......	......	......	......	......	79.9	5.9	8.0	......	......	......
169	74.0	......	......	......	......	......	81.5	7.5	10.1	......	......	......	93.5	12.0	14.7
170	......	......	......	79.8	4.3	5.7	86.4	......	......	......	......	......	91.8	5.4	6.3
171	82.0	......	......	......	......	......	90.5	8.5	10.4	......	......	......	107.0	16.5	18.2
172	......	......	......	78.9	9.1	13.0	......	......	......	82.3	3.4	4.4	......	......	......
173	......	......	......	76.0	1.5	2.0	87.1	......	......	......	......	......	108.0	20.9	24.0
174	......	......	......	66.7	3.9	6.2	......	......	......	75.2	8.5	12.7	......	......	......
175	......	......	......	77.0	8.6	12.6	......	......	......	88.7	11.7	15.2	......	......	......
Av.	......	2.7	4.4	......	4.8	6.9	......	9.2	13.6	......	9.2	13.1	......	10.7	13.5
Av. var.	......	1.7	......	......	2.9	......	......	2.9	......	......	3.2	......	......	5.4	......
176	68.5	......	......	......	......	......	76.5	8.0	11.7	......	......	......	82.0	5.5	7.2
177	75.0	......	......	79.0	......	......	80.1	5.1	6.8	80.3	1.3	1.6	93.7	13.6	16.9
178	73.0	......	......	......	......	......	75.0	2.0	2.7	......	......	......	82.5	7.5	10.0
179	77.8	6.3	8.8	......	......	......	85.9	8.1	10.4	......	......	......	103.6	17.7	20.6
180	......	......	......	61.7	4.9	8.6	......	......	......	69.8	8.1	13.1	......	......	......
181	72.4	7.1	10.9	......	......	......	77.9	5.5	7.6	......	......	......	86.7	8.8	11.3
182	......	......	......	67.7	2.2	3.4	......	......	......	77.4	9.7	14.3	......	......	......
183	75.0	......	......	......	......	......	78.5	3.5	4.7	......	......	......	87.0	8.5	10.8
184	......	......	......	74.5	6.0	8.8	......	......	......	83.1	8.6	11.5	87.5	......	......
185	84.0	3.7	4.6	......	......	......	93.7	9.7	11.5	......	......	......	110.9	17.2	18.4
186	......	......	......	70.5	7.0	11.0	77.9	......	......	......	......	......	......	......	......
187	......	......	......	75.0	......	......	......	......	......	90.0	15.0	20.0	......	......	......
188	......	......	......	87.9	12.4	16.4	......	......	......	......	......	......	......	......	......
189	......	......	......	79.8	5.1	6.8	......	......	......	85.6	5.8	7.3	......	......	......
190	67.0	......	......	......	......	......	72.5	5.5	8.2	......	......	......	87.6	15.1	20.8
191	......	......	......	83.2	4.7	6.0	......	......	......	95.7	12.5	15.0	......	......	......
192	......	......	......	88.3	5.3	6.4	......	......	......	101.1	12.8	14.5	......	......	......
193	......	......	......	101.0	11.8	13.2	......	......	......	114.8	13.8	13.7	......	......	......
194	79.8	......	......	......	......	......	90.2	10.4	13.0	......	......	......	106.9	16.7	18.5
195	......	......	......	......	......	......	82.0	......	......	......	......	......	90.4	8.4	10.2
196	......	......	......	104.5	8.8	9.2	......	......	......	113.0	9.5	8.1	......	......	......
197	......	......	......	83.0	7.5	9.9	84.3	......	......	......	......	......	98.5	14.2	16.8
198	......	......	......	97.1	13.4	16.0	......	......	......	110.7	13.6	14.0	......	......	......
199	......	......	......	106.8	17.8	20.0	121.0	......	......	......	......	......	130.0	9.0	7.4
200	......	......	......	95.3	10.3	12.1	......	......	......	102.4	7.1	7.5	......	......	......
Av.	71.7	5.7	8.1	79.0	8.4	10.6	80.8	6.4	8.5	87.7	9.7	11.7	94.9	11.9	14.1
Av. var.	......	1.3	......	......	3.5	......	......	2.3	......	......	3.2	......	......	3.9	......

boys with consecutive measurements, from 12 to 17 years of age.

expressed in pounds.]

14½ years.			15 years.			15½ years.			16 years.			16½ years.			17 years.			No.
Weight.	Increment, 13½–14½ years.	Per cent gain.	Weight.	Increment, 14–15 years.	Per cent gain.	Weight.	Increment, 14½–15½ years.	Per cent gain.	Weight.	Increment, 15–16 years.	Per cent gain.	Weight.	Increment, 15½–16½ years.	Per cent gain.	Weight.	Increment, 16–17 years.	Per cent gain.	
96.5	9.0	10.8	105.5	.....	.....	115.2	18.7	19.5	.....	.....	.....	124.5	9.3	8.1	.....	.....	.....	151.
90.5	13.3	17.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	180.9	.....	.....	152.
76.0	8.9	13.1	79.5	.....	.....	91.0	15.0	19.7	96.0	16.5	20.8	102.0	11.0	12.1	110.0	14.0	14.6	153.
.....	.....	.....	96.4	12.1	14.4	.....	.....	.....	111.3	14.9	15.5	.....	.....	.....	128.5	17.2	15.5	154.
.....	.....	.....	102.1	9.9	10.7	.....	.....	.....	115.5	13.4	13.1	.....	.....	.....	117.7	2.2	1.9	155.
76.0	.....	.....	.....	.....	.....	84.7	8.7	11.4	90.0	.....	.....	101.5	16.8	19.8	112.5	22.5	25.0	156.
.....	.....	.....	112.5	.....	.....	118.0	.....	.....	131.7	19.2	17.1	.....	.....	.....	135.5	3.8	2.9	157.
.....	.....	.....	76.1	4.5	6.3	.....	.....	.....	90.9	14.8	19.4	.....	.....	.....	103.4	12.5	13.8	158.
91.5	4.9	5.6	.....	.....	.....	100.5	9.0	9.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	159.
80.0	.....	.....	.....	.....	.....	.....	.....	.....	101.8	.....	.....	.....	.....	.....	106.5	4.7	4.6	160.
89.1	7.8	8.9	.....	.....	.....	94.6	5.5	6.2	.....	.....	.....	109.8	15.2	16.1	.....	.....	.....	161.
87.7	21.2	27.7	104.3	.....	.....	112.8	25.1	28.6	122.5	18.2	17.4	128.0	15.2	12.4	135.0	12.5	10.2	162.
.....	.....	.....	98.3	14.9	17.9	.....	.....	.....	112.6	14.3	14.5	.....	.....	.....	121.7	9.1	8.2	163.
.....	.....	.....	105.5	8.0	8.2	.....	.....	.....	127.6	22.1	20.9	.....	.....	.....	134.2	6.6	5.2	164.
102.7	14.7	16.8	.....	.....	.....	118.8	16.1	15.7	.....	.....	.....	129.8	11.0	9.3	.....	.....	.....	165.
110.7	15.0	15.7	.....	.....	.....	115.2	4.5	4.1	.....	.....	.....	.....	.....	.....	122.1	.....	.....	166.
.....	.....	.....	103.8	16.2	18.5	.....	.....	.....	113.3	9.5	9.2	.....	.....	.....	123.6	10.3	9.1	167.
93.5	13.6	17.0	.....	.....	.....	106.3	12.8	13.7	.....	.....	.....	115.7	9.4	8.8	.....	.....	.....	168.
108.8	.....	.....	.....	.....	.....	.....	.....	.....	125.5	.....	.....	126.5	.....	.....	.....	.....	.....	169.
.....	.....	.....	99.2	7.4	8.1	.....	.....	.....	95.0	−4.2	−4.2	.....	.....	.....	130.2	35.2	37.1	170.
.....	.....	.....	105.8	−1.2	−1.1	.....	.....	.....	114.4	8.6	8.1	.....	.....	.....	122.9	8.5	7.4	171.
95.3	13.0	15.8	.....	.....	.....	117.0	21.7	22.8	.....	.....	.....	141.7	24.7	21.1	.....	.....	.....	172.
.....	.....	.....	120.6	12.6	11.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	173.
82.9	7.7	10.2	.....	.....	.....	104.5	21.6	26.1	.....	.....	.....	117.0	12.5	12.0	.....	.....	.....	174.
103.6	14.9	16.8	.....	.....	.....	111.5	7.9	7.6	.....	.....	.....	120.3	8.8	7.9	.....	.....	.....	175.
.....	12.0	14.6	.....	9.4	10.5	.....	13.9	15.4	.....	13.4	13.8	.....	3.4	12.7	.....	12.2	11.9	Av.
.....	3.7	.....	.....	4.3	.....	.....	5.8	.....	.....	4.8	.....	.....	3.7	.....	.....	5.5	.....	Av. var.
93.2	.....	.....	105.2	23.2	28.3	117.5	24.3	26.1	120.4	15.2	14.4	.....	.....	.....	127.5	7.1	5.9	176.
.....	.....	.....	108.0	14.3	15.3	118.0	.....	.....	.....	.....	.....	.....	.....	.....	138.5	.....	.....	177.
88.0	.....	.....	.....	.....	.....	.....	.....	.....	102.9	.....	.....	119.4	.....	.....	.....	.....	.....	178.
.....	.....	.....	123.9	20.3	19.6	.....	.....	.....	136.6	12.7	10.8	.....	.....	.....	140.1	3.5	2.6	179.
80.5	10.7	15.3	.....	.....	.....	97.9	17.4	21.6	.....	.....	.....	111.5	13.6	13.9	.....	.....	.....	180.
.....	.....	.....	103.0	16.3	18.8	.....	.....	.....	121.2	18.2	17.8	.....	.....	.....	130.9	9.7	8.0	181.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	110.8	.....	.....	.....	.....	.....	182.
.....	.....	.....	92.5	5.5	6.3	.....	.....	.....	108.7	16.2	17.5	.....	.....	.....	118.1	9.4	8.6	183.
92.5	9.4	11.3	104.2	16.7	19.1	109.7	17.2	18.9	.....	.....	.....	122.8	13.1	11.9	128.5	.....	.....	184.
.....	.....	.....	129.4	18.5	16.7	.....	.....	.....	143.0	13.6	10.5	.....	.....	.....	146.0	3.0	2.1	185.
92.9	.....	.....	97.9	.....	.....	.....	.....	.....	113.9	16.0	16.3	.....	.....	.....	130.5	16.6	14.6	186.
107.0	17.0	18.9	110.6	.....	.....	.....	.....	.....	.....	.....	.....	133.8	.....	.....	134.6	.....	.....	187.
118.1	.....	.....	.....	.....	.....	130.5	12.4	10.5	.....	.....	.....	138.8	8.3	6.4	.....	.....	.....	188.
94.4	8.8	10.3	.....	.....	.....	117.5	23.1	24.5	.....	.....	.....	128.4	10.9	9.3	.....	.....	.....	189.
.....	.....	.....	102.8	15.2	17.4	.....	.....	.....	109.4	6.6	6.4	.....	.....	.....	109.8	.4	.4	190.
108.0	12.3	12.9	.....	.....	.....	132.0	24.0	22.2	.....	.....	.....	139.7	7.7	5.8	.....	.....	.....	191.
112.9	11.8	11.7	.....	.....	.....	130.5	17.6	15.6	.....	.....	.....	141.9	11.4	8.7	.....	.....	.....	192.
123.5	8.7	7.6	.....	.....	.....	137.9	14.4	11.7	.....	.....	.....	155.7	17.8	12.9	.....	.....	.....	193.
.....	.....	.....	124.3	17.4	16.3	.....	.....	.....	146.9	22.6	18.2	.....	.....	.....	152.0	5.1	3.5	194.
98.4	.....	.....	.....	.....	.....	100.5	2.1	2.1	.....	.....	.....	98.5	−2.0	−2.0	.....	.....	.....	195.
128.7	15.7	13.9	.....	.....	.....	133.1	4.4	3.4	.....	.....	.....	153.5	20.4	15.4	.....	.....	.....	196.
.....	.....	.....	110.6	12.1	12.3	.....	.....	.....	118.8	8.2	7.4	.....	.....	.....	.....	.....	.....	197.
123.2	12.5	11.3	.....	.....	.....	124.3	1.1	.9	.....	.....	.....	128.7	4.4	3.6	.....	.....	.....	198.
.....	.....	.....	.....	.....	.....	156.2	.....	.....	.....	.....	.....	158.6	2.4	1.6	.....	.....	.....	199.
111.2	8.8	8.6	.....	.....	.....	132.9	21.7	19.5	.....	.....	.....	146.7	13.8	10.4	.....	.....	.....	200.
98.5	11.6	10.1	104.9	16.0	17.0	115.4	15.0	14.8	115.4	14.3	13.2	127.1	10.2	8.2	128.5	7.9	5.7	Av.
.....	2.3	.....	.....	3.3	.....	.....	6.7	.....	.....	3.6	.....	.....	5.0	.....	.....	3.9	.....	Av. var.

TABLE 19.—*Increments of growth in lung capacity for a group*

[Lung capacity and increment

No.	7 years.			7½ years.			8 years.			8½ years.			9 years.			9½ years.		
	Lung capacity.	Increment, 6–7 years.	Per cent gain.	Lung capacity.	Increment, 6½–7½ years.	Per cent gain.	Lung capacity.	Increment, 7–8 years.	Per cent gain.	Lung capacity.	Increment, 7½–8½ years.	Per cent gain.	Lung capacity.	Increment, 8–9 years.	Per cent gain.	Lung capacity.	Increment, 8½–9½ years.	Per cent gain.
1	65															80		
2	61						73	12	20.0				84	11	15.1			
3	60						62	2	3.4				76	14	22.5			
4										68			78					
5				50									70			88		
6										65			68			68	3	4.6
7				55						79	24	43.6				92	13	16.4
8				61						61	0	.0				78	17	27.9
9				76						98	22	28.9				98	0	.0
10	70	50	250.0				78	8	11.4				84	6	7.7			
11				68	18	36.0				88	20	29.1				96	8	9.1
12	52			62						70	8	12.9				70	0	.0
13										80			80			95	15	18.8
14	38																	
15										70			70			80	10	14.3
16	70						70	0	.0				70	0	.0			
17	60						78	18	30.0				84	6	7.7			
18				50	10	25.0				70	20	40.0				78	8	11.4
19	65			85														
20	40									66						72	6	9.1
21										98						95	−3	−3.1
22				74			80						90	10	12.5			
23				102						102	0	.0				116	14	1.4
24				86			92						90	−2	−2.2			
25	90	26	40.6				96	6	6.7				104	8	8.3			
Av.		38	145.3		14	30.5		7.7	8.9		3	20.6		6.8	9.2		7.9	9.1
Av. var.		12			4			5.0			8			2.3			5.3	
26	40						60	20	50.0				90	30	50.0			
27				73			79			79	6	8.2	85	6	7.6	75	−4	−5.1
28	75			75			80	5	6.6									
29				72						72	0	.0				92	20	2.8
30	59						80	21	35.6				88	8	10.0			
31				98	14	16.7				100	2	2.0				112	12	12.0
32	40																	
33				68	7	11.5				78	10	14.7				89	11	14.1
34										95						105	10	10.5
35				80									104					
36																68		
37				80			90						110	20	22.2			
38	66			80	14	21.2				90	10	12.5				100	10	11.1
39				80						86	6	7.5				104	18	20.9
40	100						108	8	8.0				107	−1	−.9			
41	110			115			85	−25	−21.7	100	−15	−13.0	100	15	17.6			
42				90						100	10	11.1				104	4	4.0
43	60			85			70	10	16.6									
44				70									85					
45				61	37	154.1				86	25	40.8				110	24	27.8
46				108	38	54.3				98	−12	−11.1				120	24	25.0
47				74						86	12	16.2				90	4	4.6
48										90			100			100	10	11.1
49	78						80	2	2.5				88	8	10.0			
50	98			104	6	6.2	108	10	12.0	90	−14	−13.4						
Av.	71.3			77.9	19.3	44.2	81.8	6.4	13.6	93.5	3.3	6.3	87.3	12.3	16.6	91.7	11.9	11.6
Av. var.					12.1			9.3			9.3			8.0			8.2	

of 50 girls with consecutive measurements, from 7 to 13 years of age.

expressed in cubic centimeters.]

10 years.			10½ years.			11 years.			11½ years.			12 years.			12½ years.			13 years.			
Lung capacity.	Increment, 9–10 years.	Per cent gain.	Lung capacity.	Increment, 9½–10½ years.	Per cent gain.	Lung capacity.	Increment, 10–11 years.	Per cent gain.	Lung capacity.	Increment, 10½–11½ years.	Per cent gain.	Lung capacity.	Increment, 11–12 years.	Per cent gain.	Lung capacity.	Increment, 11½–12½ years.	Per cent gain.	Lung capacity.	Increment, 12–13 years.	Per cent gain.	No.
85			75	−5	−6.3				85	10	13.3	97			105	20	23.5	120	23	23.7	1.
98	14	16.7				108	10	10.2				118	10	9.3				148	30	25.4	2.
94	18	23.6				102	8	8.5				110	8	7.8				124	14	12.7	3.
72	−6	−7.7				92	20	28.5				100	8	8.7				114	14	14.0	4.
			92	4	4.5				98	6	6.5	90			112	14	14.2	104			5.
			79	11	16.2																6.
			88	4	4.4				98	10	11.3										7.
			92	14	17.9				114	22	23.9				126	12	10.5				8.
			118	20	20.1				124	6	5.1				134	10	8.1				9.
88	4	4.8				110	22	25.0				112	2	1.8				134	22	19.7	10.
			98	2	2.0				108	10	10.2				118	10	.9				11.
									94												12.
			100	5	5.6	105			115	10	9.5	130	25	23.8	140	25	21.7	155	25	19.2	13.
90						113						180	67	59.2				125	−55	−30.5	14.
80	10	14.3				85	5	6.3	95			95	10	11.7	125	30	31.5	130	35	36.8	15.
98	28	40.0				92	−6	−6.1				118	26	28.2				138	20	16.9	16.
84	0	.0				102	18	21.4				122	20	19.6							17.
			88	10	12.8				96	8	9.1				120	24	25.0				18.
105			125			125	20	19.0				130	5	4.0	165			180	50	38.4	19.
			80	8	11.1	76						112	36	47.3				122	10	8.9	20.
105			130	35	36.8	132	27	25.7	130	0	.0	145	13	9.8	155	25	19.2	165	20	13.8	21.
94	4	4.4				110	16	17.0				118	8	7.2				138	20	16.9	22.
124						134	10	8.1				158	24	17.9				188	30	19.0	23.
108	18	20.0				110	2	1.9				128	18	16.3				140	12	4.3	24.
111	10	9.6				124	10	8.8	126			136	12	9.6				158	22	16.1	25.
	10.0	12.6		9.8	11.4		12.5	13.4		9.1	9.9		18.2	17.6		18.9	17.2		18.3	16.0	Av.
	6.6			7.3			7.4			2.7			11.1			6.6			11.4		Av. var.
108	18	20.0				114	6	5.5				128	14	12.2				148	20	15.4	26.
															114						27.
100			110			120	20	20.0				145	25	20.8	165			165	20	13.7	28.
91						110	19	20.8				122	12	10.9				161	39	31.9	29.
98	10	11.3				104	6	6.1				118	14	13.4	130						30.
			114	2	1.7				126	12	10.5				142	16	12.7				31.
			90			84						122	38	45.2	128						32.
			98	9	10.1				110	12	12.2				136	26	23.6				33.
			130	25	23.8				130	0	.0				145	15	11.5				34.
114	10	9.6				120	6	5.2				132	12	10.0				144	12	9.1	35.
96			128	60	88.2	159	63	65.6							147			147			36.
122	12	1.1				130	8	6.5				144	14	10.7				168	24	14.2	37.
			120	20	20.0				132	12	10.0				178	46	34.8				38.
			120	16	15.3										138						39.
124	17	15.8				132	8	6.4				140	8	6.1				160	20	14.4	40.
						130			140			155	25	19.2				175	20	12.9	41.
			118	14	13.4				118	0	.0				142	24	20.3				42.
			115			130						140	10	7.7	140						43.
122	37	43.5				134	12	9.8	153			153	19	14.1	165	12	7.8				44.
			120	10	9.1				128	8	6.6				150	22	17.1				45.
			130	10	8.3				142	12	9.2				190	48	33.8				46.
			112	22	24.4				124	12	10.7				164	40	32.3				47.
			105	5	5.0	110			125	20	19.1	130	20	18.1				150	10	7.1	48.
110	22	25.0				124	14	12.7				140	16	12.8							49.
									122												50.
100.9	18.0	18.0	106.7	17.6	19.9	114	16.2	15.8	119	9.8	8.7	128	17.5	15.5	141.3	27.7	21.8	146.2	19.4	14.8	Av.
	6.6			10.1			10.7			2.6			6.1			11.4			5.5		Av. var.

TABLE 20.—*Increments of growth in lung capacity for a group*

[Lung capacity and increment

No.	12 years.			12½ years.			13 years.			13½ years.			14 years.		
	Lung capacity.	Increment, 11–12 years.	Per cent gain.	Lung capacity.	Increment, 11½–12½ years.	Per cent gain.	Lung capacity.	Increment, 12–13 years.	Per cent gain.	Lung capacity.	Increment, 12½–13½ years.	Per cent gain.	Lung capacity.	Increment, 13–14 years.	Per cent gain.
51	90			106						126	20	18.9			
52	98	4	14.3				118	20	20.4				130	12	10.2
53				128						128	0	.0			
54				100	2	2.0	110						130	20	18.2
55				86	4	4.9	90						105	15	16.7
56	110	30	37.5	116						124	8	6.9			
57	100	−25	−20.0	105	−25	−19.2	110	10	10.0						
58				90	2	2.3				118	28	31.1			
59	120	28	30.4				140	20	16.7				144	4	2.9
60	110	14	14.6				124	14	12.7	138					
61	122	12	10.9				142	20	16.4				154	12	8.5
62	125			120	15	14.3				145	25	20.8	170		
63	105												142		
64	105												150		
65				110	6	5.8	124						144	20	16.1
66	125	25	25.0				150	25	20.0	175			185	35	23.3
67										145			140		
68	118	10	19.3	128						144	16	12.5			
69	112									136					
70				130	16	14.0				148	18	13.8			
71	146						158	12	8.2				170	12	7.6
72	112	14	14.3				128	16	14.3				136	8	6.3
73	119	29	32.3										148		
74				132	22	20.0				138	6	4.5			
75	124	24	24.0				142	18	14.5				142	0	.0
Av.		15.0	16.6		5.3	5.5		17.2	14.8		15.1	13.6		13.8	11.0
Av. var		11.0			9.5			3.9			5.9			5.5	
76	110						120	10	9.1				140	20	16.7
77	112	12	12.0				125	13	11.6				135	10	8.0
78	110	10	10.0				125	15	13.6	140					
79				130	22	20.4				150	20	15.4			
80															
81	124						140	16	12.9				150	10	7.1
82	105	5	5.0										140		
83	112	10	9.8				140	28	22.3	144			168	28	20.0
84	128						136	8	6.3				148	12	8.8
85							61						70	9	14.8
86	140	12	9.4				154	14	10.0				190	36	23.3
87				136	18	15.3	154						180	26	16.9
88													115		
89	145						150	5	3.4						
90				136	24	21.4				160	24	17.6			
91				150											
92	138	19	16.0				170	32	23.2				174	4	2.4
93	171			183			171	0	.0	177	−6	−3.3	165	−6	−3.5
94				134	28	26.4				148	14	10.4	156		
95	124	4	3.3				140	16	12.9				176	36	25.7
96	130	5	4.0										170		
97	146						164	18	13.3				190	26	15.8
98				180	20	12.5				210	30	16.7			
99				168	30	21.7				170	2	1.2			
100				138	18	15.0				138	0	.0			
Av.	125.2	9.6	8.7	128.9	22.9	19.0	134.1	14.6	11.5	147.7	12.0	8.3	153.5	17.6	13.0
Av. var		3.7			3.9			5.0			9.7			11.1	

of 50 girls with consecutive measurements, from 12 to 17 years of age.

expressed in cubic centimeters.]

14½ years.			15 years.			15½ years.			16 years.			16½ years.			17 years.			
Lung capacity.	Increment, 13½–14½ years.	Per cent gain.	Lung capacity.	Increment, 14–15 years.	Per cent gain.	Lung capacity.	Increment, 14½–15½ years.	Per cent gain.	Lung capacity.	Increment, 15–16 years.	Per cent gain.	Lung capacity.	Increment, 15½–16½ years.	Per cent gain.	Lung capacity.	Increment, 16–17 years.	Per cent gain.	No.
152	26	20.6				152	0	0.0	160			164	12	7.9				51.
			152	22	16.9				152	0	0.0				156	4	2.6	52.
160	32	25.0				172	12	7.5							220			53.
			140	10	7.7				144	4	2.9				154	10	6.9	54.
			124	19	18.1				140	16	12.9				150	10	7.1	55.
148	24	19.4				168	20	13.5				180	12	7.1				56.
			145			140			160	15	10.3				170	10	6.3	57.
134	16	13.6				140	6	4.5				140	0	.0				58.
			152	8	5.6				156	4	2.6				164	8	5.1	59.
148	10	7.2				158	10	6.8				158	0	.0				60.
			168	14	9.1				178	10	6.0							61.
			185	15	8.8	195						205	10	5.1	200			62.
155			160	18	12.7				165	5	3.1	175						63.
150			155	5	3.3				160	5	3.2	160			170	10	6.3	64.
			158	14	9.7				172	14	8.9				172	0	.0	65.
190	15	8.6	215	30	16.2	215	25	13.2	210	−5	−2.3	215	0	.0	195	−15	−7.1	66.
						140						147	7	5.0				67.
168	24	16.7				182	14	8.3				192	10	5.5				68.
148	12	8.8	180						190	10	5.6				196	6	3.2	69.
164	16	10.8				164	0	.0				172	8	4.9				70.
			190	20	11.8				192	2	1.1				178	−14	−7.3	71.
			148	12	8.8				150	2	1.3				160	10	6.7	72.
			158	10	6.8				162	4	2.5				164	2	1.2	73.
148	10	7.2				148	0	.0				148	0	.0				74.
			168	26	18.3				168	0	.0				170	2	1.2	75.
	18.5	13.8		15.9	10.9		9.7	6.0		5.0	3.9		5.9	3.6		3.3	2.5	Av.
	6.4			5.6			4.0			3.9			2.3			6.4		Av. var
			160	20	14.3				166	6	3.8				178	12	7.2	76.
			154	19	14.1										166			77.
160	20	14.3	165			155	−5	−3.1	170	5	3.0	175	20	13.9				78.
168	18	12.0				180	12	7.1				184	4	2.2				79.
																		80.
			150	0	.0	180			184	34	22.7				188	4	2.2	81.
150			145	5	3.6				150	5	3.3	170			170	20	13.3	82.
			177	9	5.4				198	21	11.9				204	6	3.0	83.
			170	22	14.9				172	2	1.2				178	6	3.5	84.
81			85	14	20.0							158						85.
			190	0	.0				234	44	23.2				236	2	.9	86.
			194	14	7.8				208	14	7.2				216	8	3.8	87.
115			130	15	13.0	121	6	5.1				147	26	21.5	166			88.
155			175						190	15	8.6				180	−10	−5.3	89.
174	14	8.8				184	10	5.7				186	2	1.1				90.
190			200			210	20	10.5				200	−10	−4.8	215			91.
190									204			206						92.
									192			184						93.
			170	14	9.0							172			180			94.
			190	14	8.0	196						200	4	2.0				95.
165			175	5	2.9	170	5	3.0	180	5	2.9	185	15	8.8	190	10	5.6	96.
			200	10	5.3				212	12	6.0				220	8	3.8	97.
226	16	7.6				240	14	6.2				238	−2	−.8				98.
180	10	5.5				194	14	1.8				196	2	1.0				99.
150	12	8.7				164	14	9.3				170	6	3.7				100.
158.8	15.0	9.5	164.5	11.5	8.5	172.6	10.0	5.0	176.5	14.8	8.5	178.8	6.7	5.0	183	6.6	3.8	Av.
	3.0			4.1			5.3			9.9			8.2			5.0		Av. var.

TABLE 21.—*Increments of growth in lung capacity for a group of*

[Lung capacity and increment

No.	7 years.			7½ years.			8 years.			8½ years.			9 years.			9½ years.			10 years.		
	Lung capacity.	Increment, 6–7 years.	Per cent gain.	Lung capacity.	Increment, 6½–7½ years.	Per cent gain.	Lung capacity.	Increment, 7–8 years.	Per cent gain.	Lung capacity.	Increment, 7½–8½ years.	Per cent gain.	Lung capacity.	Increment, 8–9 years.	Per cent gain.	Lung capacity.	Increment, 8½–9½ years.	Per cent gain.	Lung capacity.	Increment, 9–10 years.	Per cent gain.
101.	55												80			92			76	−4	−5.0
102.										70						86	16	22.9			
103.	58						60	2	3.4				60	0	0.0				64	4	6.7
104.				72	8	12.5				82	10	12.9				90	8	9.8			
105.				67						91	24	35.8				100	9	9.9			
106.	60						68	8	13.3				68	0	.0						
107.				55						72	17	30.9				80	8	11.1			
108.													76					8.3	90	14	18.4
109.										96						104	8				
110.							70						84	14	20.0				98	14	16.7
111.				60			68						82	14	20.6				100	18	21.9
112.	76	12	18.8				80	4	5.3				92	12	15.0				100	8	8.7
113.	70						70	0	.0				102	32	45.7	112					
114.	76	16	27.7				90	14	18.4				90	0	.0				96	6	6.7
115.				88	18	25.0				96	8	9.1				102	6	6.3			
116.							76						98	22	28.9				118	20	20.4
117.	65						65	0	.0										102		
118.				74	4	5.7				90	16	21.6				102	12	13.3	92		
119.				66						84	18	27.3				104	20	23.8			
120.				66	16	32.0				70	4	6.1				72	2	2.9			
121.				82						84	2	2.4				92	8	9.5			
122.										86						100	14	16.2			
123.				72						80	8	11.1				90	10	12.5			
124.										75			85			80	5	6.6			
125.							74						90	16	21.6				108	18	20.0
Av.		14	23.2		11.5	19.0		4.7	9.5		11.9	17.6		12.2	16.9		9.7	11.8		10.9	12.7
Av. var.		2			5.5			2.7			6.1			6.8			8.0			7.1	
126.							78						92	14	18.2				100	8	8.7
127.	60						78	18	30.0				90	12	15.4				110	20	22.2
128.	90						100	10	11.1				122	22	22.0				130	8	6.6
129.				108						92	−16	−14.8				122	30	32.6			
130.	65			75															110		
131.										98						128	30	30.6			
132.													108			120					
133.							92						90	−2	−2.2	136					
134.				120			132														
135.				61						112	51	83.6				120	8	7.1			
136.				80			100						118	18	18.0				124	6	5.1
137.				98									108			132					
138.	79						100	21	26.7				110	10	10.0				114	4	3.6
139.																93					
140.				92						106	14	15.2				106	0	.0			
141.										92						96	4	4.3			
142.										110											
143.	84			100						112	12	12.0							132	8	
144.										106						110	4	3.8			
145.				102						112	10	9.8				126	14	12.5			
146.	86						120	34	40.0				140	20	16.7	142			148	8	5.7
147.	96						106	10	10.4				120	14	13.2				132	12	10.0
148.	85			100															135		
149.										114						128	14	12.3			
150.	130	30	30.0																154		
Av.	77.2			82.4			85.6	18.6	25.6	92.6	14.2	21.1	95.7	13.5	13.9	105.9	13.0	12.9	111.5	9.4	8.8
Av. var.								7.1			14.7			5.1			7.4			3.7	

50 boys, with consecutive measurements, from 7 to 13 years of age.

expressed in cubic centimeters.]

10½ years.			11 years.			11½ years.			12 years.			12½ years.			13 years.			
Lung capacity.	Increment, 9½–10½ years.	Per cent gain.	Lung capacity.	Increment, 10–11 years.	Per cent gain.	Lung capacity.	Increment, 10½–11½ years.	Per cent gain.	Lung capacity.	Increment, 11–12 years.	Per cent gain.	Lung capacity.	Increment, 11½–12½ years.	Per cent gain.	Lung capacity.	Increment, 12–13 years.	Per cent gain.	No.
....	....	....	....	....	....	81	....	....	95	....	....	100	19	23.5	100	5	5.3	101.
94	8	9.3	....	....	....	98	4	4.3	....	....	....	110	12	12.2	....	....	....	102.
....	....	....	72	8	12.5	....	....	....	80	8	11.1	....	....	....	....	....	....	103.
102	12	13.3	....	....	....	106	4	3.9	....	....	....	118	12	11.3	....	....	....	104.
120	20	20.0	....	....	....	128	8	6.7	....	....	....	136	8	6.3	....	....	....	105.
....	....	....	70	....	....	....	....	....	88	18	25.7	....	....	....	100	12	13.6	106.
88	8	10.0	....	....	....	90	2	2.3	....	....	....	....	....	....	....	....	....	107.
....	....	....	88	−2	−2.2	....	....	....	90	2	2.3	....	....	....	114	24	26.7	108.
....	....	....	....	....	....	105	....	....	130	....	....	130	25	23.8	138	8	6.2	109.
....	....	....	108	10	10.2	....	....	....	110	8	7.4	....	....	....	128	12	10.4	110.
....	....	....	118	18	18.0	....	....	....	120	2	1.7	....	....	....	122	2	1.7	111.
....	....	....	110	10	10.0	....	....	....	114	4	3.6	....	....	....	130	16	14.0	112.
122	10	8.9	....	....	....	136	14	11.4	....	....	....	150	14	10.3	....	....	....	113.
....	....	....	104	8	8.3	....	....	....	....	....	....	120	....	14.5	....	....	....	114.
120	18	17.6	....	....	....	124	4	3.3	....	....	....	142	18	....	....	....	....	115.
....	....	....	124	6	5.1	....	....	....	126	2	1.6	....	....	....	154	28	22.2	116.
....	....	....	107	5	4.9	104	....	....	....	....	....	110	6	5.8	....	....	....	117.
....	....	....	104	12	13.4	....	....	....	118	14	13.5	....	....	....	122	4	3.4	118.
110	6	5.8	....	....	....	120	10	9.1	....	....	....	....	....	....	....	....	....	119.
80	8	11.1	....	....	....	100	20	25.0	....	....	....	....	....	....	....	....	....	120.
100	8	8.7	....	....	....	110	10	10.0	....	....	....	110	0	....	....	....	....	121.
104	4	4.0	....	....	....	110	6	5.8	....	....	....	136	26	23.6	....	....	....	122.
98	−8	8.8	....	....	....	122	24	24.5	....	....	....	128	6	4.9	....	....	....	123.
95	15	18.8	111	....	....	....	....	....	100	−11	−10.0	....	....	....	135	35	35.0	124.
....	....	....	108	0	.0	....	....	....	126	18	15.7	....	....	....	132	6	4.8	125.
....	9.0	14.4	....	7.5	8.0	....	9.6	9.7	....	6.5	7.3	....	13.3	12.4	....	13.8	13.0	Av.
....	4.9	....	....	3.5	....	....	5.4	....	....	6.7	....	....	6.5	....	....	8.7	....	Av. var.
....	....	....	112	12	12.0	138	....	....	....	....	....	148	10	7.2	....	....	....	126.
....	....	....	128	18	16.4	....	....	....	144	16	12.5	....	....	....	144	0	.0	127.
....	....	....	138	8	6.2	....	....	....	184	46	33.3	....	....	....	230	46	25.0	128.
140	18	14.8	....	....	....	148	8	5.7	....	....	....	152	4	2.7	....	....	....	129.
120	....	....	115	5	4.5	....	....	....	137	22	19.1	150	....	....	....	....	....	130.
140	12	9.4	156	....	....	....	....	....	178	22	14.1	....	....	....	192	14	7.9	131.
124	4	3.5	....	....	....	140	16	12.9	....	....	....	154	14	10.0	....	....	....	132.
143	6	4.4	....	....	....	152	10	7.1	....	....	....	172	20	13.2	....	....	....	133.
....	....	....	....	....	....	128	....	....	148	....	....	150	22	17.2	....	....	....	134.
126	6	5.0	....	....	....	130	4	3.2	....	....	....	....	....	....	....	....	....	135.
....	....	....	138	14	11.1	....	....	....	156	18	13.0	....	....	....	....	....	....	136.
140	8	6.1	....	....	....	156	16	11.4	....	....	....	172	16	10.2	....	....	....	137.
....	....	....	128	14	12.2	....	....	....	142	14	10.9	....	....	....	....	....	....	138.
....	....	....	75	....	....	....	....	....	100	25	33.0	125	....	....	145	45	45.0	139.
132	26	24.5	....	....	....	158	26	20.0	....	....	....	....	....	....	....	....	....	140.
110	14	14.4	....	....	....	108	−2	−1.8	....	....	....	118	10	9.3	....	....	....	141.
135	....	....	140	....	....	155	20	14.8	170	30	21.4	175	20	12.9	190	20	11.7	142.
144	....	....	....	....	....	152	8	5.6	....	....	....	152	0	.0	....	....	....	143.
130	20	18.2	....	....	....	132	2	1.5	....	....	....	146	14	10.6	....	....	....	144.
140	14	11.1	....	....	....	156	16	11.4	....	....	....	174	18	11.5	....	....	....	145.
160	18	12.6	178	30	20.3	....	....	....	188	10	5.6	....	....	....	196	10	5.3	146.
....	....	....	152	20	15.2	....	....	....	166	14	9.2	....	....	....	182	16	9.6	147.
150	....	....	137	2	1.5	....	....	....	145	8	5.6	165	....	....	....	....	....	148.
134	6	4.7	....	....	....	146	12	9.0	....	....	....	150	4	2.7	....	....	....	149.
•172	....	....	174	20	12.9	....	....	....	190	16	9.2	....	....	....	210	20	10.6	150.
123.2	12.7	10.7	119.8	14.3	11.2	126.2	11.3	8.4	134.0	20	15.6	140.5	12.7	9.0	150.8	21.4	14.4	Av.
....	5.7	....	....	6.2	....	....	6.3	....	....	7.4	....	....	5.0	....	....	9.4	....	Av. var.

TABLE 22.—*Increments of growth in lung capacity of a group of*

[Lung capacity and increment

No.	12 years.			12½ years.			13 years.			13½ years.			14 years.		
	Lung capacity.	Increment, 11-12 years.	Per cent gain.	Lung capacity.	Increment, 11½-12½ years.	Per cent gain.	Lung capacity.	Increment, 12-13 years.	Per cent gain.	Lung capacity.	Increment, 12½-13½ years.	Per cent gain.	Lung capacity.	Increment, 13-14 years.	Per cent gain.
151	110			110						150	40	36.3			
152	108						124	16	14.8	124					
153				126			130			130	5	4.0			
154	103						120	17	16.5				132	12	10.0
155	90	−2	−2.2				118	28	31.1				148	30	25.4
156													100		
157							130								
158							118						118	0	.0
159	130						138	8	6.2	145					
160	100						108	8	8.0				118	10	9.3
161				118						142	24	20.3			
162										138					
163	124	14	12.7				126	2	1.6				168	42	33.3
164	135						152	17	12.6				172	20	13.2
165				128	12	10.3				148	20	15.6			
166	100						128	28	28.0	152					
167				118	2	17.2				142	24	20.3	164		
168	162	0	.0	184						200	16	8.7			
169	110						128	18	16.4				152	24	18.8
170				132	0	.0	144						162	18	12.5
171	150	46	43.4				162	12	8.0				198	36	22.2
172				114	4	3.6									
173				132	12	10.0	155						192	37	23.9
174				102	4	4.1				112	10	9.8			
175				143	31	27.7				158	15	10.5			
Av.		14.5	13.5		9.3	10.3		15.4	14.3		19.3	15.7		22.9	16.9
Av. var.		12.0			6.4			6.3			7.8			10.9	
176	125						120	−5	−4.0						
177							168			170			150	−18	−10.7
178							118						138	20	17.0
179	124	6	5.1				128	4	3.2				152	24	18.8
180				110	8	7.8				128	18	16.4			
181	134	12	9.8				140	6	4.5				160	20	14.4
182				115	9	8.5				128	13	11.3			
183	150						172	22	14.6				180	8	4.7
184				120											
185	128						152	24	18.8				176	24	15.8
186				118	28	31.1	128								
187				140						164	24	17.1			
188				158	18	12.9									
189				138	18	15.0				142	4	2.9			
190	144	4	2.9				160	16	11.1				192	32	20.0
191				150	10	7.1				172	22	14.7			
192				176	4	2.3				188	12	6.7			
193				155	20	14.8									
194	118						142	24	20.3				178	36	25.4
195							152						178	26	17.1
196				156	11	7.6				164	8	5.1			
197				133	3	2.3	138						170	32	23.2
198				172	36	26.5				208	36	20.9			
199				162	6	3.8	190						240	50	26.3
200				150	26	19.0				158	8	5.3			
Av.	123.4	7.3	5.9	136.9	15	12.2	138.9	13.0	9.8	152.9	16.1	11.2	162.5	23.0	15.6
Av. var.		3.1			9			9.7			7.9			8.9	

50 boys with consecutive measurements, from 12 to 17 years of age.

expressed in cubic centimeters.]

14½ years.			15 years.			15½ years.			16 years.			16½ years.			17 years.			
Lung capacity.	Increment, 13–14 years.	Per cent gain.	Lung capacity.	Increment, 14–15 years.	Per cent gain.	Lung capacity.	Increment, 14½–15½ years.	Per cent gain.	Lung capacity.	Increment, 15–16 years.	Per cent gain.	Lung capacity.	Increment, 15½–16½ years.	Per cent gain.	Lung capacity.	Increment, 16–17 years.	Per cent gain.	No.
163	13	8.7	194	....	....	210	47	28.8	......	....	....	255	45	21.4	......	....	....	151.
142	18	14.5	......	....	....	......	....	....	......	....	....	......	....	....	230	....	....	152.
138	8	6.2	160	....	....	160	22	15.9	170	10	6.3	192	32	20.0	220	50	29.4	153.
......	....	....	138	6	4.5	......	....	....	180	42	30.4	......	....	....	210	30	16.6	154.
......	....	....	178	30	20.2	......	....	....	188	10	5.6	......	....	....	194	6	3.2	155.
115	....	....	......	....	....	142	27	23.4	140	....	....	......	....	....	......	....	....	156.
......	....	....	......	....	....	225	....	....	248	30	13.8	......	....	....	270	22	8.9	157.
......	....	....	140	22	18.6	......	....	....	140	0	.0	......	....	....	182	42	30.0	158.
160	15	10.3	184	....	....	184	24	15.0	......	....	....	......	....	....	......	....	....	159.
132	....	....	......	....	....	......	....	....	168	....	....	......	....	....	186	18	10.7	160.
144	2	1.4	168	....	....	168	24	16.7	......	....	....	180	12	7.1	......	....	....	161.
182	44	31.9	200	....	....	210	28	15.4	215	15	7.5	255	45	21.4	265	50	23.3	162.
......	....	....	194	26	15.5	......	....	....	230	36	18.6	......	....	....	242	12	5.0	163.
......	....	....	202	30	17.6	......	....	....	234	32	15.8	......	....	....	262	28	12.0	164
170	22	14.9	202	....	....	202	32	18.8	......	....	....	232	30	14.9	......	....	....	165.
184	32	21.5	211	....	....	211	27	14.7	......	....	....	......	....	....	220	....	....	166.
......	....	....	182	18	11.0	......	....	....	218	36	19.8	......	....	....	230	12	5.5	167.
222	22	11.0	278	....	....	272	50	22.5	......	....	....	308	36	13.2	......	....	....	168.
172	....	....	......	....	....	......	....	....	220	....	....	240	....	....	......	....	....	169.
......	....	....	178	16	9.9	......	....	....	190	12	6.7	......	....	....	234	44	23.2	170.
......	....	....	214	16	8.1	......	....	....	258	44	20.6	......	....	....	268	10	3.9	171.
158	....	....	178	....	....	178	20	12.7	......	....	22.6	218	40	22.5	......	....	....	172.
......	....	....	212	20	10.4	......	....	....	260	48	22.6	......	....	....	......	....	....	173.
152	40	35.7	180	....	....	180	28	10.8	......	....	....	200	20	11.1	......	....	....	174.
172	14	8.8	200	....	....	200	28	16.2	......	....	....	230	30	15.0	......	....	....	175.
......	20.9	15.0	......	20.4	12.9	......	29.7	17.6	......	26.3	14.0	......	32.2	16.3	......	27.0	14.3	Av.
......	10.1	....	......	5.8	....	......	6.7	....	......	14.0	....	......	8.2	....	......	13.7	....	Av. var.
......	....	....	160	30	....	183	....	....	202	42	26.3	......	....	....	230	28	13.9	176.
......	....	....	180	30	20.0	182	....	....	......	....	....	......	....	....	240	....	....	177.
138	....	....	......	30	....	......	....	....	182	....	....	190	....	....	......	....	....	178.
......	....	....	218	66	43.4	......	....	....	254	36	16.5	......	....	....	268	14	5.5	179.
148	20	15.6	......	....	....	190	42	28.4	......	....	....	228	38	20.0	......	....	....	180.
......	....	....	190	30	18.7	......	....	....	212	22	11.6	......	....	....	250	38	17.9	181.
......	....	....	......	....	....	......	....	....	......	....	....	200	....	....	......	....	....	182.
......	....	....	192	12	6.7	......	....	....	216	24	12.5	......	....	....	272	56	25.9	183.
165	....	....	177	....	....	190	25	15.2	......	....	....	220	30	15.8	148	....	....	184.
......	....	....	208	32	18.2	......	....	....	240	32	15.4	......	....	....	256	16	6.7	185.
150	....	....	162	....	....	......	....	....	204	42	25.9	......	....	....	232	28	13.7	186.
212	48	29.3	218	....	....	......	....	....	......	....	....	260	....	....	256	....	....	187.
260	....	....	......	....	....	278	18	6.9	......	....	....	308	30	10.8	......	....	....	188.
160	18	12.7	......	....	....	200	40	25.0	......	....	....	232	32	16.0	......	....	....	189.
......	....	....	244	52	27.1	......	....	....	268	24	9.8	......	....	....	270	2	7.5	190.
190	18	10.5	......	....	....	212	22	11.6	......	....	....	260	48	22.6	......	....	....	191.
238	50	26.6	......	....	....	278	40	16.8	......	....	....	320	42	15.1	......	....	....	192.
......	....	....	220	....	....	......	....	....	245	25	11.4	......	....	....	265	20	8.2	193.
......	....	....	210	32	17.9	......	....	....	236	26	12.4	......	....	....	256	20	8.5	194.
208	....	....	......	....	....	228	20	9.6	......	....	....	218	−10	−4.4	......	....	....	195.
178	14	8.5	......	....	....	210	32	18.0	......	....	....	254	44	21.0	......	....	....	196.
......	....	....	196	26	15.3	......	....	....	212	16	8.1	......	....	....	......	....	....	197.
240	32	15.4	......	....	....	270	30	12.5	......	....	....	270	0	.0	......	....	....	198.
......	....	....	......	....	....	288	....	....	......	....	....	310	22	7.6	......	....	....	199.
172	14	8.9	......	....	....	210	38	83.1	......	....	....	238	28	13.3	......	....	....	200.
173.8	26.8	15.8	191.7	35.0	20.9	210	30.7	16.6	212.6	28.9	15.0	242.6	27.6	12.5	236.4	24.7	12.0	Av.
......	11.5	....	......	12.0	....	......	7.7	....	......	7.3	....	......	12.9	....	......	11.4	....	Av. var.

(B) INDIVIDUAL HEALTH NOTES.

Notes on the physical condition of individuals whose curves in height, weight, and lung capacity are given in Charts IIa and IIb (pp. 40, 53).[1]

Those appearing in the group of 100 in Tables 13 and 14 are: 3—136; 5—200; 6—190; 10—180; 11—115; 13—161; 14—155.

1. Excellent health; fine physique; astigmatism at 8½.

2. Pneumonia at 4; excellent health at 5. Measles, chicken pox, and whooping cough; shoulders round at last measurement. Parents American.

3. Health average at entrance and has had adenoids, bronchitis, and tonsillitis; tonsils removed; adenoids removed and arm broken at 6½; circumcised at 8 years 2 months; arm fractured at last measurement. Parents American.

4. Excellent health; has had measles, tonsillitis, chicken pox; left tonsil swollen when 13; tonsils normal when 15; eyes weak.

5. Adenoids removed at 12½; recovered from grippe at 13½; hearing in left ear defective; nervous; adenoid expression.

6. Average health; has had chicken pox, grippe, tonsillitis; anæmic at 14; tonsils slightly enlarged; gets dizzy and faint when compelled to stand still for long period of time.

7. Had double hernia at 5 years 4 months; wears truss; lordosis when 6½; eyes weak, and began to wear glasses when 9½. Mother Irish, father American.

8. At entrance has had chicken pox, whooping cough, measles, bronchitis; heart rate rather rapid; standing posture poor; out of school at — with typhoid fever; shoulders round; at 18 health good, but too fat.

9. Health good; shoulders round; recommended to see oculist. Parents American.

10. Appendix removed when 10; tonsils large and removal advised at 12 years 4 months; condition good at 13½; at 15 years 4 months was thin, anæmic, and had flat chest; eyes weak during last measurements and glasses fitted. Parents American.

11. Has had whooping cough, chicken pox; enlarged throat glands when 7½; nutrition unsatisfactory; adenitis on left side; tonsils enlarged between 9 and 10; round shoulders during last measurements. Parents American.

12. Good health during last measurements; has had pneumonia twice; adenoids removed; has lordosis.

13. Has had whooping cough, chicken pox, scarlet fever, malaria, measles; well nourished at 10 years 4 months; systolic muffled sound to heart at 17 years 8 months. Parents American.

14. Has had pneumonia, bronchitis, chicken pox, measles; uncontrolled nervous action; catarrhal tendency; shoulders, back, and spine irregular; at 10 catarrh of bowels, delicate, and ill most of the time; at 13 tendency to weak feet; at 14 glasses for near-sightedness.

15. Has had measles, chicken pox, mumps, pleurisy; health good at 13½; at 14 slight conjunctivitis; at 15 more so and at 16 full conjunctivitis; condition good at 17 years 3 months.

Notes on the physical condition of individuals whose curves in height, weight, and lung capacity are given in Charts IIIa and IIIb (pp. 41, 55).

Those appearing in the group of 100 in Tables 13 and 14 are: 1—146; 2—145; 5—144; 7—197; 8—186; 9—171; 10—163; 11—118; 13—103; 14—158; 15—102.

1. Had whooping cough when 7 years 11 months; corrective work begun for shape of back at 8; condition improved at 9 years 5 months; adenoids removed at 8 years 11 months; corrective gymnastic work continued.

2. Bronchial trouble and anæmic condition from second to fourth year; when 6½ had pleurisy and this continued until operation at 9 years 3 months, after which condition improved.

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[1] The health notes for Charts Ia and Ib may be found on pp. 58, 60.

3. At entrance had had chicken pox; tonsillitis at 12 years 5 months; broke wrist when 15; health good.

4. Has had bronchitis, chicken pox, measles, whooping cough; at 9 had muscular twitching of the entire body; improved at 11; much improved at 12.

5. Health good.

6. Health good at entrance. Parents American.

7. At entrance health good, but had had pneumonia; tendency to catarrh; from 10½ to 11½ well except for colds; nervous; follicular conjunctivitis; impediment in speech probably due to nasal obstruction; at 15 condition fair; flat chest.

8. At entrance health good, had had childhood diseases; tendency to biliousness (hereditary), weak stomach; at 11–12 tonsils enlarged; tendency to headache; at 13 tonsils normal; at 14½ condition good. Mother American, father Scotch.

9. At entrance health excellent, and had had measles, malaria, and scarlet fever; at 12 recovering from operation for appendicitis; out of school 4 weeks; follicular conjunctivitis; tonsils enlarged from 12–14; improved at 15; at 15 glasses for astigmatism; condition good. Mother American, father English.

10. Health good; at 18 shoulders round.

11. Has had grippe and pneumonia; entero-colitis; part nasal obstruction by adenoids and hypertrophied tonsils; tonsils removed; between 6½ and 7½ had measles, colds, and stomach trouble; at 8 had granular conjunctivitis on left lower lid; between 8 and 8½ bad colds; 10–11 tonsils enlarged; condition otherwise good.

12. At entrance health excellent; has had mumps, chicken pox, scarlet fever, whooping cough, measles, 4 or 5 attacks of tonsillitis; from 7 to 8 tonsils enlarged; tonsillitis, under care of physician; 8–9 health good; at 10 condition fair; at 11 shoulders round; has not grown; perfectly well; at 15 left cervical gland palpable.

13. Has had measles, whooping cough, several attacks of tonsillitis; at 6 internal strabismus; advised to see occulist; sensitive disposition; at 7 wearing glasses; at 8 condition good; heart slow and irregular; restless; follicular conjunctivitis; at 9 slight spinal curvature; adenoids and tonsils removed at 8½; nervous, imaginative, cries easily.

14. Health good at entrance; has had no diseases or injuries; at 11 nutrition moderate; at 13 had fall injuring ear, causing hemorrhage, but hearing not injured; at 14 condition fair; improved at 15. Parents American.

15. Health excellent at entrance; and has had measles, chicken pox, whooping cough; tendency to nervousness; condition good; slight spinal curvature.

Notes on physical condition of individuals whose curves in height, weight, and lung capacity are given in Charts IVa and IVb (pp. 42, 55).

Those appearing in the group of 100, Tables 4 and 5, are: 2—95; 3—46; 4—38; 5—37; 6—20; 9—22; 10—55.

1. Health good; has had measles, chicken pox, bronchitis; heart overactive when 13 and gymnasium work suspended.

2. Health good.

3. Subject to colds; between 11 and 12 tonsils enlarged (note slight arrest in growth in height and weight and lung capacity); at 10 had measles.

4. Health good; slightly nervous heart. Parents American.

5. Health good; measles at 7 years 6 months (no apparent evil effect in growth); heart overactive at 9; slight eye trouble later. Parents American.

6. Health good; has had children's diseases. (No data to explain arrest at 8 years 6 months.)

7. Health good; wears braces on legs.

8. Health fair; has had eczema, pneumonia, whooping cough, chicken pox, measles, and mumps; subject to catarrh; asthmatic tendencies.

9. Health good.

10. Health good; has had children's diseases; tonsils removed when 13 (note subsequent increases in growth in height and weight); menstruation began when 16. Parents American.

11. Health good; inclined to be nervous; subject to tonsillitis; eyes weak.

Notes on the physical condition of individuals whose curves in height, weight, and lung capacity are given in Charts Va and Vb (pp. 43, 56).

Those appearing in the group of 100 in Tables 4 and 5 are: 1—49; 3—97; 4—92; 9—17; 10—23.

1. At entrance health good; had had infantile diseases and pneumonia, adenoids removed; first menstruation at 11½; nervous temperament; back not strong; at 13 back straighter; hips prominent; at 13½ advised to improve standing.

2. Bad position; more exercise advised; joints flexible; has had pneumonia, measles, and chicken pox in early childhood; right arm broken three times; adenoids and tonsils removed between 11 and 11½ (note increase in height and weight following operation).

3. Thin and delicate until entering school; diphtheria when small; round shoulders during later school life (note flattening of height curve). Parents American.

4. Average health; father died of apoplexy; subject to catarrh and sore throat (note gradual decrease in weight curve). Mother American, father Danish.

5. Health very good, but appetite small; measles and whooping cough, but no apparent evil effects; slightly rapid heart beat at 11½. Parents American.

6. Health fair; has had measles, pneumonia, typhoid fever, chicken pox; shoulders round. Parents American.

7. Health good; standing position poor; studying very hard at 11.

8. Health good; standing position poor in later school life (note effect on height curve, but no effect in weight curve).

9. Health good from 10 to 15; heart slightly overactive; somewhat anæmic; spine slightly irregular; had jaundice at 17.

10. Health good. Parents American.

11. Health good; apparently late appearance of menstruation. Mother Swiss, father French.

12. Health good. Parents American.

Notes on the physical condition of individuals whose curves in height, weight, and lung capacity are given in Charts VIa and VIb (pp. 44, 56).

Those appearing in the group of 100 in Tables 4 and 5 are: 1—99; 3—42; 4—98; 6—40; 7—30; 9—72; 10—16; 11—10; 12—18.

1. Has had children's diseases with no apparent ill effect; grew "too fast" at 11 (note acceleration in height curve); at 14 was taking osteopathic treatment for backache (note arrest in growth in height and weight at 13½); appetite poor.

2. Has had scarlet fever, whooping cough, measles, chicken pox, mumps, tonsillitis, and enlarged glands; slight curvature of spine; weak heart at 17; a tall thin girl. (Compare curves in height and weight and small lung capacity.)

3. Anæmic, nervous; heart skipped 1 in 18 or 20 beats when 7; menstruation commenced at 13½. Parents American.

4. Health good, but had pneumonia and malaria in early childhood; posture poor at 16.

5. Health good; has had children's diseases; ill between 13 and 14; posture poor and shoulders round. (Note drop in height curve after 14.) Parents American.

6. Health good.

7. Small; adenoids removed when about 8 (note slight arrest in growth in height and weight); at 10 had typhoid fever (note acceleration in weight following this period).

8. Health on entering school good and had had children's diseases; out of school at 14 with typhoid fever (note slight arrest in height and marked arrest in weight); fat with stooped shoulders.

9. Health good; shoulders round (note flattening of height curve).

10. Health good; has had pneumonia, scarlet fever, and typhoid fever; very thin at 10 and posture poor at this time; flat feet. Parents American.

11. Tonsils and adenoids removed when 6; condition good, but takes cold easily. Parents American.

12. Ruptured and delicate; when 7 had severe case of scarlet fever.

13. Health good; has had pneumonia, diphtheria, and other diseases as a child; stomach trouble; posture poor.

Notes on the physical condition of individuals whose curves in height, weight, and lung capacity are given in Charts VIIa and VIIb (pp. 45, 57).

Those appearing in the group of 100 in Tables 4 and 5 are: 1—100; 2—86; 3—81; 4—83; 5—74; 6—73; 7—56; 8—65; 9—59; 10—52; 11—51.

1. Had pneumonia previous to entering school, and adenoids removed; health good; first menstruation at age of 12; back not strong; standing posture poor at 14 and later (note flattening of curve in height); nervous temperament; more outdoor exercise advised. Mother American, father English.

2. Had several children's diseases; liver and nervous troubles; from 14 to 15, stomach trouble (note arrest on increase in weight curve).

3. Health good all the time; standing posture poor.

4. Delicate and nervous; adenoids removed just before 13 (note subsequent increase in growth, in height, and weight). Parents American.

5. Mother died of tuberculosis; enlarged glands on both sides of neck; catarrh; nervous (note decided arrest in growth in height after 13 and decrease in weight after 15½ years). Parents American.

6. Has had children's diseases; hereditary tendency to bleed; irregular menstruation periods. (Note arrest in growth in height after 12 years and in weight after 14.)

7. Has had malaria and children's diseases; had an apparent attack of appendicitis between 11 and 12 (note effect on height); menstruation began between 15 and 16. Parents American.

8. Has had chicken pox, measles, whooping cough, scarlet fever, tonsillitis; health good when entering school, but later stomach trouble and anæmic (note arrest in growth in weight and height). Parents American.

9. Health good in early school life; later anæmic; weak spine; jaundice at 17. (Note arrest in growth in height and weight after 13.) Parents American.

10. Health apparently good. (Note arrest in growth in height.)

11. Has had children's diseases, whooping cough, chicken pox; tonsils enlarged at 13½. Shoulders round at 15½. Slight lateral curvature; heart rapid; nearsighted. (Note light weight.) Mother American, father German.

Notes on the physical condition of individuals whose curves in height, weight, and lung capacity are given in Charts VIIIa and VIIIb (pp. 46, 57).[1]

Those appearing in the group of 100 in Tables 13 and 14 are: 1—148; 3—142; 4—193; 6—157; 9—176; 10—162; 11—151; 12—117.

1. Had pneumonia between 9 and 10; heart weak. Parents and grandparents American.

2. Parents and grandparents American.

3. Parents and grandparents Russian.

4. Parents American, maternal grandparents English, paternal grandmother English, paternal grandfather American.

5. Parents and grandparents Russian.

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[1] In Charts VIII-XII, inclusive, the nationality of parents and grandparents is included in the health notes. In most cases in Charts VIII and IX data on the physical condition of the individuals included were entirely lacking.

6. Parents and grandparents German.

7. Mother German, father American, grandparents German.

8. Parents and grandparents German.

9. Parents American, maternal grandmother American, maternal grandfather Welsh, paternal grandmother German-French, paternal grandfather German.

10. Parents American, maternal grandmother Scotch, maternal grandfather English, paternal grandparents German.

11. Mother Danish, father American, maternal grandparents Danish, paternal grandmother French, paternal grandfather German.

12. Anæmic; trouble with throat and glands at 10; nervous. Parents and grandparents American.

Notes on the physical condition of individuals whose curves in height, weight, and lung capacity are given in Charts Xa and Xb (pp. 48, 58).

Those appearing in the group of 100 in Tables 4 and 5 are: 2—89; 3—48; 6—78; 7—19; 9—66; 10—64; 11—1; 12—57.

1. Apparently normal. Parents American, grandparents German.

2. At 12 had chicken pox, subject to colds in the head and nose bleed; at 14 subject to colds, loss in weight. Mother Swedish, father Norwegian, maternal grandparents Swedish, paternal grandparents Norwegian.

3. Before 6 had had measles and chicken pox; subject to colds and earache; at 11 very tall. (Compare height and weight.) Parents American, maternal grandmother Scotch-Canadian, maternal grandfather American, paternal grandparents American.

4. At 11½ had had mumps, measles, and tonsillitis; at 14 good physical condition. Parents American, maternal grandparents German, paternal grandparents German-American.

5. Has had measles, mumps, whooping cough, and chicken pox; at 13½ had grown rapidly; muscular system weak. Parents and grandparents American.

6. Before 12 had had mumps, measles, and whooping cough; subject to sore throat, cold, headaches, earache; at 15 slightly underdeveloped. Parents American, grandparents German.

7. At entrance poorly nourished; at 9½ had had whooping cough and chicken pox; at 11 below normal weight; at 12½ had measles. Parents and grandparents American.

8. At entrance had had chicken pox; condition normal. Parents and grandparents American.

9. At 11 general condition good, and had had grippe, mumps, measles, earache; subject to colds; at 12 condition excellent; at 13 had bronchial colds; at 13½ condition improved after removal of adenoids; at 16 general health excellent. Parents American, maternal grandmother American-English-French, maternal grandfather American-English-Scotch, paternal grandparents American-English.

10. At entrance pale, nervous, oversensitive, taking treatment for nose and throat, no appetite; before 13 had had mumps, whooping cough, chicken pox, and diphtheria; after 16 condition good. Parents American, maternal grandparents Welsh, paternal grandparents American.

11. Health excellent. Parents and grandparents German.

12. Before 15 had had measles and chicken pox; subject to bilious attacks and headaches. Mother German, father German-American, grandparents German.

Notes on the physical condition of individuals whose curves in height, weight, and lung capacity are given in Charts XIa and XIb (pp. 49, 59).

Those appearing in the group of 100 in Tables 4 and 5 are: 1—43; 2—82; 5—96; 7—91.

1. At 10 had chicken pox; subject to cold in the head. Mother American, paternal grandmother Irish, paternal grandfather English.

2. Has had measles, chicken pox, mumps; subject to sick headaches at 14. Parents American, maternal grandparents English, paternal grandparents German.

3. Has had measles, mumps, scarlet fever, diptheria; adenoids removed between 11 and 12; at 13 subject to headache from eyes, sore throat, tonsillitis, backache, and nose bleed.

4. Good health.

5. Poor carriage; arrested development. Parents American, both grandmothers American, both grandfathers German.

6. Mother Canadian, father American, maternal grandmother American, maternal grandfather Canadian, paternal grandparents English.

7. At 14 had had mumps, measles, whooping cough, chicken pox, and penumonia. Parents American, maternal grandmother American, maternal grandfather English, paternal grandmother American, paternal grandfather Irish.

8. Had measles at 14½ and later hernia. Parents American, grandparents American of Irish descent, paternal grandparents American, of Holland, Scotch, French, and English descent.

9. General condition good. Parents and grandparents American.

Notes on the physical condition of individuals whose curves in height, weight, and lung capacity are given in Charts XIIa and XIIb (pp. 50, 59).

Those appearing in the group of 100 in Tables 4 and 5 are: 3—41; 7—21; 8—15; 9—13; 10—62.

1. At entrance had had measles, whooping cough, chicken pox; very heavy, fat, slow of movement. Parents American, grandparents German.

2. At entrance had had mumps, chicken pox, and measles. Parents American, maternal grandmother American, maternal grandfather American-Canadian, paternal grandparents American.

3. At 12 had had scarlet fever. Parents and grandparents American.

4. At entrance had had measles, whooping cough, chicken pox, grippe; tonsils removed at 7½; between 9 and 10 suffered much colds; after this improvement. Parents American, maternal grandmother American, maternal grandfather American-Canadian, paternal grandparents American.

5. Before 8 had had measles, whooping cough, chicken pox; fat, overweight.

6. At entrance had had whooping cough, measles, scarlet fever, chicken pox; between 12 and 13 heart trouble, out of school three-fourths of the time. Mother German-American, father Norwegian-American, maternal grandparents German; paternal grandparents Norwegian.

7. At 7 had had mumps; at 13 condition normal. Parents American, maternal grandmother English, maternal grandfather Welsh, paternal grandmother Irish, paternal grandfather Scotch-English.

9. Between 8 and 9 had pneumonia; poorly developed; after 11 improvement; at 13 eyes poor; underweight.

10. At 11½ had had diphtheria, chicken pox, mumps, measles, pneumonia; subject to rheumatism; slightly improving.

11. At 15 had had whooping cough, measles, subject to headache and sore throat; at 17 sore throat.

Notes on the physical condition of individuals whose curves in height, weight, and lung capacity are given in Charts XIIIa and XIIIb (pp. 51, 60).

Those appearing in the group of 100 in Tables 4 and 5 are: 1—50; 2—44; 4—36; 5—88; 6—27; 8—6.

1. Strong and healthy; adenoids and tonsils removed just before 12; first menstruation at 12.

2. Tonsils enlarged from 10 to 11; first menstruation at 12 years 5 months. Parents and grandparents American.

3. Weak costal arches; first menstruation at 13. Parents and grandparents American.

4. Adenoids removed at 9 years 8 months, and again at 13½; first menstruation at 13 years 9 months. Parents American, maternal grandparents American, paternal grandmother American, paternal grandfather Canadian.

5. Stooped shoulders, but general health good; first menstruation at 15 years 3 months 17 days.

6. Poor health at 12 years 5 months; first menstruation at 16 years 1 month. Parents American, maternal grandmother American, maternal grandfather English, paternal grandparents American.

7. Adolescent heart at 16; otherwise normal; first menstruation 14 years 6 months.

8. Had first menstruation at 14. Mother American, father German-American, maternal grandparents American, paternal grandparents German.

9. First menstruation at 16 years 7 months. Mother American, father Canadian, maternal grandparents American, paternal grandparents Scotch.

10. Enlarged tonsils at 14; excused from gymnasium work at 15; first menstruation at 13 years 4 months.

Notes on the physical condition of individuals whose curves in height, weight, and lung capacity are given in Charts XIVa and XIVb (pp. 52, 60).

Those appearing in the group of 100 in Tables 4 and 5 are: 6—32; 12—85.

2. Stoop shoulders at 9; arches of foot broken between 12 and 13. Parents and grandparents American.

3. Tonsils enlarged after 11, removed at 12 years 9 months; posture poor; first menstruation at 12 years 7 months. Parents and grandparents American.

4. Tired, weak; matured at 15. Mother American, father Canadian, maternal grandparents Scotch, paternal grandmother English, paternal grandfather Scotch.

5. General condition excellent; at 12 had mumps.

6. Health in infancy poor; had rickets; at 10 attack of measles; enlarged tonsils after 10, at 14 left tonsil still enlarged; first menstruation at 12 years 9 months. Mother English-Scotch, father German, maternal grandmother Scotch-English, maternal grandfather English, paternal grandmother English, paternal grandfather German.

7. Apparently normal.

8. Weak heart; otherwise normal. Parents and grandparents American.

9. At 6 had measles; at 10 adenoid growths; tonsillitis between 10 and 11; first menstruation at 13 years 1 month. Parents and grandparents American.

10. Apparently normal; poor eyesight. Parents and grandparents American.

11. Nothing unusual. Parents and grandparents American.

12. At 12 spine very crooked, at 14 straight; menstruation began at 14. Parents and grandparents American.

(C) INDIVIDUAL WEIGHT-HEIGHT AND VITAL INDICES.

TABLE 23.—*Weight-height and vital indices.*[1]

[The hundredths denote weight-heights; the thousandths denote vital indices.]

FOR CHARTS IIa and IIb (HORACE MANN BOYS).

	Years of age.																							
	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½
1	0.19 .069		0.21 .067		0.23 .061		0.24 .067		0.24 .070																
2		0.19 .049			.21 .054			0.22 .062		0.23 .062		0.25 .060													
3	.16 .061	.17 .061			.18 .056	0.18 0.69		.19 .073		.21 .070		.23 .068		0.24 .071		0.26 .068				0.27 .074					
4																.28 .063	0.31 .060		0.34 .052		0.37 .077		0.40 .075		0.41 .075
5													0.25 .053		0.27 .056		.28 .055		.29 .055		.34 .057		.37 .058		.38 .055
6											0.19		.20 .077	.20 .077			.21 .079		.24 .067	.27 .088		0.28 .088			.28 .097
7	.20 .052		.19 .051		.19 .061		.20 .063		.21 .064		.22 .063	.24 .065													
8																									
9		.18 .060		0.19 .066				.20 .060		.22 .060															
10													.18 .065		.19 .064		.21 .065		.23 .066		.26 .070		.29 .075		.32 .071
11	.16		.17 .060		.18 .066		.20 .065		.20 .063		.21 .070		.22 .065		.24 .066		.27 .066		.30 .064			.34 .066			
12	.17 .019	.17 .049		.17 .061		.19 .060		.23 .058		.25 .057		.25 .057				.28 .052									
13							.20		.21 .064		.22 .064	.23 .057			.25 .056		.26 .062		.28 .058		.28 .064		.31 .059		.35 .066
14								.17 .052		.18 .062		.19 .059		.21 .052		.24 .056		0.27 .057		.29 .062		.33 .058		0.33 .060	
15															.25 .066		.26 .072		.27 .066	.29 .068		.32 .074	.34 .078		.35 .078

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[1] The table for charts Ia and Ib may be found on page 63.

TABLE 23.—*Weight-height and vital indices*—Continued.

FOR CHARTS IIIa and IIIb (HORACE MANN BOYS).

	Years of age.																							
	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½
1				0.21 .050		0.23 .061		0.25 .062	0.25 .063	0.26 .060	0.27 .063	0.28 .065		0.34 .061		0.35 .053			0.38 .067						
2			0.18 .066		0.19 .066		0.21 .063		.22 .064		.24 .064		0.25 .065		0.27 .065										
3													.25 .052		.25 .061	.28 .057					0.33 .061		0.37 .062		
4								.21 .054		.21 .063		.23 .066		.24 .066		.26 .062		0.29 .062		0.33 .063			.37 .070		
5					.20			.061	.23 .056		.23 .063		.25 .055		.30 .052		0.33 .046		.37 .050						
6		0.19 .037	.21 .045			.20	.21 .048			.24 .046	.25 .046			.27 .044		.29 .043					.30 .054				
7											.22 .055		.23 .062		.24 .067	.24 .059		.27 .061		.29 .063		0.30 .064			
8											.19		.20 .061		.21 .061	.23 .059			.26 .058	.27 .059		.29 .064		0.32 .064	
9												.23 .056		.25 .065		.28 .064		.31 .066		.30 .072		.31 .071		.33 .078	0.33 .062
10													.19 .068	.19 .076		.21 .067		.24 .073		.27 .071		.30 .073		.32 .071	.33 .072
11			.17 .056		.18 .056		.18 .063		.19 .067	.20 .055		.20 .062		.21 .063		.23 .061									
12		.14				.16 .060		.17 .062		.17 .061		.18 .066		.20 .060				.21 .055		.23 .058					
13		.16 .046		.17 .050		.17 .048		.18 .044		.19 .043		.20 .045		.20 .047											
14										.19		.19 .059				.23 .062		.22 .060		.23 .066		.26 .055	.29 .063	.32 .062	
15					.16		.17 .058		.17 .070		.18 .070		.19 .065		.19 .071		.21 .065		.23 .063						
Average	0.178	.176	.188	.187	.195	.195	.204	.202	.201	.218	.23	.224	.232	.234	.253	.259	.273	.269	.302	.274	.328	.310	.351	.334	.352
Average	.0516	.0518	.0588	.0564	.0588	.0653	.0622	.0578	.0629	.0581	.0612	.0610	.0616	.0621	.0613	.0596	.0613	.0610	.0622	.0652	.0639	.0668	.0681	.0655	.0730

FOR CHARTS IVa and IVb (HORACE MANN GIRLS).

1							0.24 .046			0.25 .063		0.26 .065	0.29 .063		0.30 .060		0.31 .058		0.35 .052		0.40 .053		0.40 .053		0.44 .051

2							.18 .025		0.20 .055		0.22 .052	.20 .064		0.27 .047		0.29 .048			.30 .054	0.33 .055	.33 .056		.34 .055		.34 .057
3			0.24 .039		0.23 .057		.26 .045		.28 .050		.30 .047		.34 .043		.36 .056		.36 .057		.36 .058						
4			.19 .049		.19 .054		.20 .055		.22 .053		.22 .060		.26 .053		.30 .062		.32 .065								
5		0.17 .059			.18 .057	0.19 .058			.20 .064		.21 .064		.23 .063		.24 .063	.26 .066									
6				0.18 .030			.20 .043		.20 .043		.24 .040	.26 .041		.30 .040	.34 .037		.33 .037		.37 .035	.39 .037		0.41 .035			
7										.22 .047		.23 .056		.25 .053		.28 .057		0.30 .053			.34 .051	.37 .051			
8											.22 .052		.22 .056		.23 .060				.28 .052		.31		.34 .050	0.33 .054	.33 .053
9		.18			.18 .055	.19 .055		0.20 .056		.23 .055		.23 .056		.24 .053		.27 .055		.31 .049		.31 .053					
10											.18 .049		.18 .055		.19 .053	.19 .054		.21 .055		.24 .056			.25 .059		.27 .057
11						.20 .034		.18 .052	.19 .061		.20 .060		.22 .054		.25 .052		.30 .048		.33 .050		.36 .048		.38 .045		

FOR CHARTS Va and Vb (HORACE MANN GIRLS).

1	0.16		0.18 .038	0.19 .050		0.19 .050		0.24 .040		0.25 .046		0.27 .038		0.28 .048		0.31 .046		0.36 .047					0.39 .049		
2										.20 .066		.21 .069		.23 .060		.25 .069		.29 .069		0.30 .073			.29 .063		
3									0.19 .055		0.22 .054		0.26 .048	.24 .063		.27 .060		.30 .060		.33 .057			.35 .057		0.36 .053
4												.25 .052		.26 .053		.29 .057		.32 .054		.38 .048		0.34 .058		0.35 .057	.34 .059
5	.22 .046		.22 .058		0.24 .056		0.26 .056		.27 .056		.30 .057		.31 .053		0.33 .052										
6	.16 .054					.16 .060		.17 .068		.18 .069		.19 .061													
7		0.20 .039		.21 .039		.24 .040		.29 .042		.33 .041		.32 .043		.34 .040		.40 .040		.41 .042							
8														.22 .061		.24 .058		.25 .059		.27 .060		.29 .057		.29 .064	.30 .062
9				.22 .038		.23 .045		.23 .046		.25 .040		.25 .047		.27 .050				.33 .050		.37 .045			.39		
10			.17		.18 .077		.17 .079		.18 .083	.18 .085		.20 .078		.22 .080		.25 .079		.29 .069		.31 .067					.31
11															.26 .049		0.28 .046		0.33 .046		0.34 .040		.36 .050		.38 .045
12	.11		.17 .054		.19 .060		.19 .063		.20 .059		.22 .052		.23 .060		.27 .059		.29 .057								

TABLE 23.—*Weight-height and vital indices*—Continued.

FOR CHARTS VIa and VIb (HORACE MANN GIRLS).

	Years of age.																								
	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½
1										0.22 .051		0.25 .060	0.27 .052		0.29 .057		0.30 .059		0.30 .058		0.30 .062		0.32 .058		
2																	.29 .049		.32 .047		.33 .051		.35 .049		0.36 .049
3					0.19 .061		0.20 .061		0.23 .052		0.23 .058		.25 .049		.27 .053		.30 .059		.33 .060						
4								0.23 .046		.27 .048		.28 .053	.30 .066		.30 .049		.40 .051		.43 .051		.44 .051		.48 .040		
5													.23 .065			0.26 .065	.28 .063		.30 .067		.32 .062		.34 .062		.32 .067
6		0.18			.20 .065			.23 .051		.23 .062		.24 .066		0.26 .059		.27 .062		0.29 .055		0.31 .051					
7				0.18 .043		0.19 .053	.19 .057			.22 .051		.26 .046		.29 .045		.32 .043		.34 .041		.37 .044	.36 .053				
8							.27 .039			.29 .041	.32 .037	.35 .038		.40 .036		.43 .040				.42 .046		0.47 .043			.48 .037
9							.19 .054		.21 .059		.21 .059	.22 .049		.23 .053			.26 .053	.28 .050		.31 .047		.32 .047		0.33 .048	
10		.14 .019		.16 .059		.16 .053		.17 .049		.19 .061		.20 .051		.22 .043		.25 .059		.26 .057							
11				.20 .048		.20 .050		.21 .048		.22 .049		.24 .053		.26 .048		.29 .050		.31 .044							
12	0.13		0.14 .040		.15 .044		.16 .054		.17 .055		.19 .055		.20 .054		.23 .057		.28 .053								
13																		.22 .054		.24 .019		.26 .064	.27 .054	.27 .052	.28 .057

FOR CHARTS VIIa and VIIb (HORACE MANN GIRLS).

	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½
1													0.27 .047			0.28 .049	0.33 .040	0.35 .040			0.35 .044		0.34 .046		0.33 .047
2											0.22 .060	0.23 .063		0.27 .063		.27 .060		.29 .066		0.30 .061		0.30 .068		0.34 .067	
3										0.30 .034			.29 .043	.30 .044		.31 .048		.36 .042		.38 .039	.37 .052	.34 .052		.37 .060	
4										.19 .063		.19 .062		.21 .060		.22 .065	.24 .060	.26 .067		.28 .063		.30 .065		.32 .061	

5									0.21		.25		.28		0.32		.34		0.34		.39		.36		.40
									.050		.046		.044		.044		.044		.047		.040		.048		.040
6								0.20		.23		.25		.29		.33		.35		.33		.33		.32	
								.050		.050		.041		.045				.044		.050		.051		.053	
7									.20			.22		.22	.22		.27		.28		.30		.32		.32
												.044		.066	.060		.051		.057		.058		.056		.060
8											.21		.23		.24	.25		.28			.28	.29		.28	
											.050		.055		.054	.055		.055			.060	.061		.063	
9								.18			.19	.21		.23		.27		.28		.29		.27		.28	.27
								.056			.060	.054		.060		.060		.057		.058		.061		.062	.062
10								.19		.23		.24		.26		.29		.31		.36		.36		.37	
								.056		.048		.050		.046		.048		.048		.046		.044		.045	
11											.18			.18		.18	.20		.23		.22	.23	.24	.24	
											.053			.065		.072	.075		.075		.075	.074	.073	.079	
Average	0.156	0.174	0.187	01.91	0.193	0.195	0.208	.187	.225	.216	.226	.240	.255	.245	.274	.278	.298	.302	.310	.323	.337	.325	.342	.314	.364
Average	.0500	.0390	.0463	.0434	.0837	.0498	.0520	.0507	.0567	.0530	.0532	.0538	.0533	.0531	.0542	.0548	.0539	.0530	.0539	.0526	.0535	.0548	.0539	.0580	.0535

FOR CHARTS VIIIa and VIIIb (FRANCIS W. PARKER BOYS).

1				0.19	0.19			0.21	0.22	0.22	0.23	0.23		0.25	0.26								0.36		
				.056	.029					.070	.074	.063		.061	.066								.067		
2								.21	.22	.21	.22	.23			.24		0.26		0.29						
										.066	.064	.063			.062		.062		.070						
3			0.21		.22	0.24	0.26			.30	.31	.31	0.32	.36	.37	0.41	.41	0.43							
							.052				.050	.050	.052	.050	.050	.050	.050	.050							
4														.27		.30		.32	.33		0.36	0.37		0.40	
														.054		.055						.062		.061	
5								.24	.24	.26	.31			.33	.33	.34	.34	.37	.39	0.43	.43				
								.061	.061	.063	.055			.053	.055	.052	.060	.059	.058	.056	.061				
6									.22	.22		.23		.23		.25	.26				.32	.36		.37	0.35
									.050	.055						.059	.063				.069	.069		.071	.074
7							.19	.19	.20	.20	.21			.23	.25	.24	.26	.28	.29	.31	.32				
									.056	.060	.058			.060	.057	.059	.058	.060	.064	.065	.070				
8																.24	.25	.28		.29	.31	.34	.35		.35
																.080	.065				.069	.070	.065		.070
9														.22		.23		.25	.27	.30	.32	.32		.33	.34
														.066		.059				.055	.056	.060		.065	.064
10													.22		.21		.23		.28	.29	.30	.33	.34	.35	
																	.065		.067	.069	.068	.063	.072	.070	
11														.21	.22	.23	.26		.28	.29	.31		.33		.34
														.061	.055	.056	.062		.061	.066	.065		.068		.071
12				.16		.16					.17	.18	.19		.19										
				.056		.053					.071	.064	.066		.066										

TABLE 23.—*Weight-height and vital indices*—Continued.

FOR CHARTS IXa and IXb (FRANCIS W. PARKER BOYS).

	Years of age.																								
	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½
1		0.19 .050	0.19 .050			0.19	0.19	0.19 .050	0.20 .051	0.21 .060		0.23 .061	0.24 .056	0.24 .054	0.25 .066	0.25 .009	0.28 .070	0.29 .072		0.32 .072	0.36 .063				
2				0.21 .040	0.22 .043			.22	.23	.23 .055	0.24 .057	.25 .057	.27 .054	.29 .053	.29 .055		.28 .057	.30 .059	0.33 .055		.35				
3														.23 .075			.25 .065		.28	.32	.32 .073	0.32 .080	0.33 .032		
4															.24		.24		.29	.30 .002	.31 .060	.32 .033			
5												.22	.22	.23 .066	.23 .065	.25 .059		.29 .067	.32 .007						0.35 .070
6					.18 .096	.18 .090					.22	.23	.24 .060	.24 .070	.24 .67		.27 .057	.30 .063	.30 .000						.37 .075
7													.21		.23 .058		.24	.25	.20 .064	.28 .061	.29 .062		.31 .064	0.32 .040	
8			.18 .094		.18		.20 .050	.20 .053	.20 .057		.21 .054	.22 .060		.23 .048		.25 .057	.26 .052	.28 .056							
9														.24	.24	.25 .076	.25 .071	.28 .057		.30 .060	.32 .054			.36 .062	.37 .069
10											.20 .059	.20 .059	.21 .055	.22 .058		.23 .063	.24 .052	.24 .058		.27 .058	.28 .060	.34 .057	.30 .060		
11									.19 .026	.20 .028			.20	.21	.21 .070	.21 .060	.22 .060		.23 .065	.24 .075	.27 .063	.27 .062	.29 .067	.29 .072	.30 .075
12		.18 .075	.19 .090					.20 .045	.21 .045	.21 .068		.22 .068	.24 .064	.23 .066	.25 .060		.26 .064	.26 .060	.26 .072	.29 .045					
13															.21	.21		.24 .049	.24 054		.25 .060	.25 .056	.29	.30	.33 .062
14				.18 .098			.18	.20 .059	.20	.20 .050		.20	.29 .039	.22 .056	.22 .058	.21 .060	.22 .060		.24						
Average		.185	.192	.185	.198	.192	.204	.206	.211	.223	.232	.227	.240	.246	.246	.256	.264	.222	.287	.302	.317	.323	.322	.340	.344
Average		.0625	.0780	.0625	.0560	.0715	.0510	.0536	.0494	.0575	.0602	.0602	.0557	.0631	.0606	.0605	.0607	.0591	.0630	.0620	.0634	.0612	.0618	.0630	.0700

FOR CHARTS Xa and Xb (FRANCIS W. PARKER GIRLS).

	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½
1							0.20	0.21 .042		0.22 .044	0.24 .050	0.24 .063	0.25 .056	0.27 .057	0.28 .051	0.30 .051		0.31 .037							

2										.23		.23	.23	.25		.25	0.29		0.28	0.28		0.30	0.32	0.32	0.31
										.051				.060		.060	.052		.054	.060		.060	.056	.053	.054
3			0.16		0.17	0.17	.17	.18	0.19		.19	.19	.20	.21			.24		.25						
			.045				.063	.065	.063		.060	.063	.070	.067			.066		.056						
4										.21		.23	.24	.24	.26	.26		.28	.31		0.34				
										.050				.061	.058	.065		.059	.060		.060				
5																	.24	.24	.29	.27	.28		.29	.30	.30
																	.070	.072	.051	.054	.058			.061	.062
6								.17		.18	.18	.19	.20	.20		.22	.24		.26	.27	.28	.27	.28		
								.064				.061	.080	.060		.060	.060		.061	.056	.063	.059	.060		
7				0.17	.16			.18	.18	.18	.19	.19		.22	.22	.24	.26	.25		.31	.29	.29			
				.053	.070					.077	.080	.079		.067	.080	.080	.080	.082		.070	.074	.072			
8		0.17	.18	.18		.18		.20	.22	.21		.22	.24	.26	.27	.29									
						.049		.039	.055	.064		.055	.053	.055	.061	.054									
9						.18	.19	.20		.21	.21	.24	.24	.25		.29	.31	.33	.36	.37	.35	.38	.45	.41	
						.050	.060	.050				.052	.061	.057		.057	.060	.058	.054	.064	.059	.055	.055	.047	
10										.19	.19	.19	.20	.20		.24	.27	.27	.27	.28		.30	.30	.32	.34
										.085	.084	.065	.058	.059				.060	.060	.060		.054	.054	.053	.051
11			.15	.17			.17	.17	.17	.18	.19		.19	.20	.22	.23	.23	.26	.27	.28	.29				
			.053	.055					.060	.063	.051		.054	.056	.034	.036	.036	.032	.036	.035	.034				
12												.18	.20	.20	.21	.19		.22	.23	.25	.25		.27	.24	.29
														.059	.055	.062				.060	.058		.060	.060	.065

FOR CHARTS XIa and XIb (FRANCIS W. PARKER GIRLS).

1				0.19	0.19	0.20		0.20		0.20	0.21	0.21	0.22	0.27	0.26		0.29	0.31		0.28		0.31			
				.041	.053	.032					.060	.068	.064	.058	.056		.058	.051		.063		.060			
2										.18	.19	.20	.20	.20		0.24	.25	.25	0.27	.28		.28	0.28	0.28	0.29
												.056	.065	.056				.052	.054	.050		.052	.058	.057	.060
3								.20	0.23	.23		.26	.28	.29	.32	.31		.34	.36		0.37				
								.058	.048	.050				.050	.051	.053		.053	.050		.051				
4							.017	.20	.22		.23	.23	.23		.25	.28	.28	.28	.29	.32					
								.058	.059		.059	.058	.059		.061	.061	.062	.067	.068	.059					
5										.23	.25	.26	.28	.27		.31	.32	.31	.32	.33	.34	.34	.33	.33	.34
										.070	.072	.050	.040	.048				.053	.050	.052	.045	.052	.056	.057	.055
6									.19			.22	.23	.25	.28	.27	.27	.28		.30					
									.052			.047	.049	.051	.050	.052	.057	.060		.041					
7															.25		.26	.30	.33	.33	.35		.35	.34	.36
															.060				.056	.058	.059		.055	.060	.060
8									.20	.21	.21		.23	.24	.26	.27	.30		.31	.30					
									.061	.055	.067				.066	.060	.053		.056	.062					
9									.20	.20	.20	.20	.22	.25	.23	.25		.26	.29		.32	.33			
												.061	.055			.064		.060	.057		.057	.056			
Average		0.17	0.163	.177	.173	.182	.180	.191	.200	.217	.206	.216	.226	.273	.254	.261	.270	.280	.293	.295	.316	.311	.318	.317	.318
Average			.049	.0496	.0615	.0436	.0615	.0537	.0568	.0609	.0636	.0598	.0587	.0575	.0569	.0575	.0594	.0568	.0548	.0562	.0543	.0577	.0567	.0560	.0581

TABLE 23.—*Weight-height and vital indices*—Continued.

FOR CHARTS XIIIa and XIIIb (UNIVERSITY OF CHICAGO GIRLS).

	Years of age.																								
	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½
1			0.21 .055	0.22 .052	0.23 .051	0.25 .050	0.25 .039			0.29			0.37 .033	0.39 .022			0.40 .050					0.40 .051	0.41 .051		
2					.20	.22 .040	.21	0.22 .046		.24 .058		0.26 .056	.27 .060	.28 .059											
3						.19	.20 .042	.21	0.22	.22			.25	.27 .050		0.29 .055	.31 .050	0.32 .052	0.33 .050		0.34 .048		.33 .058		
4			.19 .041		.19	.20 .023	.20		.20 .040	.23 .050		.23 .066	.23 .075		0.25 .061	.26 .060	.27 .061								
5													.25 .026			.31		.34 .033	.34 .033	0.34 .038	.35 .035		.36 .036	0.36	0.38 .040
6					.19 .052	.18 .060	.18 .056	.19 .060	.20 .049	.20		.20			.21 .060	.21 .036	.21 .039		.23 .057		.27 .054	.27 .054			
7								.19 .053	.19		0.20 .050		.20	.21	.20		.24 .045	.24 .050	.20 .054			.28 .050			.31 .050
8		0.15 .035			.16		.16 .050	.17 .053	.17 .050		.18 .060			.19 .055	.20 .055	.21 .053		.23 .053							
9																		.22 .056	.23 .052	.23 .054		.24 .063	.27 .061	.28 .057	.29 .058
10								.21			.21	.21		.23 .061	.24 .052			.28 .063	.30 .054	.30 .061	.31 .053	.31 .058			

FOR CHARTS XIVa and XIVb (UNIVERSITY OF CHICAGO GIRLS).

	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½
1																									
2						0.18 .045		0.19 .041	0.19					0.24 .059		0.26 .070		0.29 .068		0.30 .067		0.30 .071			
3									.22 .040	0.23 .047		0.24 .050	0.28 .044		0.33 .047										
4																			0.23 .043	.24 .049			0.26 .050	0.27 .051	0.26 .053
5										.22 .041	0.24 .050	.23 .054		.24 .058	.25	.25 .060	0.27 .060		.28 .063						
6				0.19 .029		.19		.20	.21		.23 .046		.23 .041		.25 .053	.28 .048	.34 .046	.34 .050							

7												.21	.20	.23	.23	.24									.32
												.050	.050	.054	.052	.045									0.05
8		0.17				.17	0.19		.20		.21	.22				.26		.30							
											.069	.069				.069		.060							
9						.18	.16	.19	.20			.22	.23		.26	.27	.30			.34		.32			
						.046							.052		.052	.068	.058			.051		.057			
10							.15	.21	.20		.30			.25							0.31	.32			
								.061	.052		.035			.057							.045	.046			
11																.21	.24	.28			.30		.29	.32	
																.045	.058	.054			.056		.057	.048	
12													.19	.20				.23	.24	.25			.27		
													.040					.030	.034	.033			.057		
Average		.16	0.20	.205	0.194	.195	.188	.198	.200	.232	.224	.224	.245	.248	.243	.254	.286	.279	.252	.254	.313	.305	.312	.307	.312
Average		.035	.098	.0405	.0515	.0440	.0467	.0523	.0462	.049	.0516	.0575	.0467	.0527	.0540	.0553	.0518	.0517	.0477	.0504	.0485	.0563	.0528	.0520	.0502

(D) INDIVIDUAL SCHOOL MARKS AND GRADES.

TABLE 24.—*Marks and grades.*[1]

AVERAGE MARK, GRADE, AGE, AND NUMBER OF CASES—HORACE MANN SCHOOL BOYS.

FOR CHART IIc.

No. of curve.	Age in years and months.	Age in years.																														General average.	Total cases.
		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20			
		Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.		
1.	9- 1	....	....	....	....	....	....	88^3	32	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	88	32
2.	11- 2½	....	....	....	....	....	....	....	....	....	....	82^5	38	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	82	38
3.	8- 9	....	....	....	....	....	....	83^3	16	81^4	24	83^5	44	90^6	40	84^7	47	88^8	24	....	....	....	....	....	....	....	....	....	....	....	....	85	195
4.	13-11	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	84^8	20	74^9	15	70^{10}	20	69^{11}	18	72^{12}	19	....	....	....	....	76	92
5.	12- 0	....	....	....	....	....	....	....	....	....	....	....	....	89^6	40	82^7	44	82^8	14	86^9	10	80^{10}	14	80^{11}	16	79^{12}	20	....	....	....	....	83	158
6.	10-10	....	....	....	....	....	....	....	....	....	....	87^5	48	88^6	40	84^7	48	76^8	20	80^9	20	77^{10}	24	73^{11}	21	81^{12}	18	....	....	....	....	81	239
7.	8- 0	....	....	....	....	....	....	73^4	36	78^5	40	80^6	40	76^7	43	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	78	175
8.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
9.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
10.	12- 0	....	....	....	....	....	....	....	....	....	....	....	....	83^4	41	83^5	44	85^6	47	81^7	48	78^8	20	74^9	20	75^{10}	16	77^{11}	20	....	....	80	256
11.	8-11	....	....	....	....	....	....	87^3	28	84^3	12	82^4	34	83^5	44	89^6	43	87^7	43	85^8	9	....	....	....	....	....	....	....	....	....	....	85	213
12.	8- 8	....	....	....	....	....	....	93^3	40	82^4	39	89^5	44	82^7	43	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	87	166
13.	10-11	....	....	....	....	....	....	....	....	....	....	81^3	33	86^5	43	87^6	48	85^7	48	79^8	20	80^9	26	76^{10}	24	77^{11}	28	....	....	....	....	81	270
14.	9- 6	....	....	....	....	....	....	....	....	90	39	85^4	36	88^5	45	89^6	39	81^7	48	83^8	28	80^9	28	83^{10}	28	....	....	....	....	....	....	85	291
15.	11- 8	....	....	....	....	....	....	....	....	....	....	....	....	89^5	40	91^6	39	87^8	30	78^9	23	64^{10}	20	85^{11}	22	67^{12}	21	78^{12}	18	....	....	80	213

FOR CHART IIIc.

No. of curve.	Age in years and months.	6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		General average.	Total cases.
		Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.		
1.	8- 6	....	....	....	....	....	....	78^3	16	71^4	33	83^5	44	88^6	47	84^7	44	86^8	23	....	....	....	....	....	....	....	....	....	....	....	....	82	210
2.	8-11	....	....	....	....	....	....	85^3	39	79^4	33	78^5	48	81^6	39	79^7	42	76^8	24	....	....	....	....	....	....	....	....	....	....	....	....	80	225
3.	11- 7	....	....	....	....	....	....	....	....	....	....	....	....	88^6	43	87^7	46	83^8	9	77^9	20	64^{10}	20	....	....	....	....	....	....	....	....	80	138
4.	9- 7	....	....	....	....	....	....	....	....	85^3	38	83^4	33	83^5	44	88^6	48	85^7	44	84^8	29	84^9	26	....	....	....	....	....	....	....	....	85	262
5.	10- 0	....	....	....	....	....	....	....	....	80^4	41	86^4	43	84^5	35	88^7	47	78^8	20	76^9	17	....	....	....	....	....	....	....	....	....	....	82	203
6.	11- 4	....	....	....	....	....	....	....	....	....	....	83^4	45	83^5	44	85^6	48	73^7	43	....	....	....	....	....	....	....	....	....	....	....	....	82	180
7.	9- 9	....	....	....	....	....	....	....	....	91^4	31	92^6	40	92^7	44	92^8	20	89^9	16	87^{10}	25	83^{11}	27	83^{12}	28	....	....	....	....	....	....	89	231
8.	9- 8	....	....	....	....	....	....	....	....	87^3	43	80^4	38	87^5	48	84^6	44	76^7	47	65^8	23	62^9	17	64^{10}	20	73^{11}	6	....	....	....	....	75	286
9.	11- 5	....	....	....	....	....	....	....	....	....	....	87^5	48	91^6	42	85^7	47	89^8	15	85^9	18	82^{10}	24	84^{11}	19	78^{12}	20	....	....	....	....	85	238
10.	11-10	....	....	....	....	....	....	....	....	....	....	....	....	68^5	44	83^5	41	82^6	48	83^7	47	79^8	16	81^9	20	76^{10}	20	74^{11}	20	....	....	78	256
11.	8- 9	....	....	....	....	....	....	80^2	39	81^4	36	78^5	33	84^6	48	80^7	48	72^8	18	....	....	....	....	....	....	....	....	....	....	....	....	79	222
12.	9- 5	....	....	....	....	....	....	86^3	37	84^4	34	82^5	44	82^6	48	79^7	40	73^9	22	62^{10}	24	....	....	....	....	....	....	....	....	....	....	78	249

13	8- 6	....	....	....	....	....	....	81^{3}	40	81^{3}	40	79^{4}	41	69^{5}	44	70^{6}	44	79^{4}	41	69^{6}	44	70^{6}	44	....	....	....	....	....	....	....	....	76	209
14	11- 6	....	....	....	....	....	....	81^{3}	40	81^{3}	40	....	....	83^{5}	44	....	....	84^{6}	39	82^{7}	43	81^{8}	19	78^{9}	19	73^{10}	20	73^{11}	20	78^{12}	18	79	222
15	9-11	....	....	....	....	....	....	....	....	82^{8}	32	81^{4}	42	83^{6}	44	87^{6}	48	84^{7}	48	76^{8}	20	....	....	....	....	....	....	....	....	....	....	82	234

AVERAGE MARK, GRADE, AGE, AND NUMBER OF CASES—HORACE MANN SCHOOL GIRLS.

FOR CHART IVc.

No. of curve.	Age in years and months.	Age in years.																						General average.	Total cases.
		9		10		11		12		13		14		15		16		17		18		19		20			
		Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.		
1	9- 0	88^{3}	36	89^{4}	36	87^{5}	44	85^{6}	40	84^{7}	48	79^{8}	16	81^{9}	20	76^{10}	20	82^{11}	21	85^{12}	20	....	....	....	....	84	301
2	12- 3	....	....	....	....	....	....	83^{8}	24	84^{9}	24	82^{10}	28	81^{11}	28	85^{12}	30	....	....	....	....	....	....	....	....	83	134
3	10- 0	....	....	88^{4}	36	....	....	82^{5}	44	88^{7}	48	87^{8}	24	80^{9}	23	....	....	....	....	....	....	....	....	....	....	85	175
4	8-11	94^{3}	16	91^{4}	42	....	....	93^{6}	47	91^{7}	48	91^{9}	20	....	....	....	....	....	....	....	....	....	....	....	....	92	173
5	8-10	95^{3}	16	93^{4}	28	92^{5}	44	94^{6}	43	93^{7}	43	90^{9}	16	....	....	....	....	....	....	....	....	....	....	....	....	93	190
6	9- 9	....	....	89^{3}	40	91^{4}	40	83^{5}	47	91^{6}	47	90^{7}	48	79^{8}	20	79^{9}	22	80^{10}	20	....	....	....	....	....	....	85	284
7	10- 8	....	....	....	....	78^{5}	48	77^{5}	47	....	....	74^{7}	44	....	....	81^{8}	21	72^{9}	22	....	....	....	....	....	....	76	182
8	10-11	....	....	....	....	92^{4}	37	88^{5}	44	92^{6}	43	86^{7}	48	85^{8}	24	75^{9}	20	82^{10}	24	79^{11}	22	75^{12}	24	....	....	84	286
9	8- 7	94^{3}	34	94^{4}	38	96^{5}	43	95^{6}	48	94^{7}	48	94^{8}	18	94^{10}	20	95^{11}	22	....	....	....	....	....	....	....	....	95	271
10	9-10	....	....	94^{4}	44	88^{5}	44	91^{6}	36	91^{7}	40	84^{8}	20	87^{9}	20	83^{10}	24	79^{11}	23	79^{12}	22	....	....	....	....	86	273
11	10- 1	....	....	86^{4}	41	84^{5}	47	85^{6}	48	90^{6}	47	90^{7}	48	85^{8}	20	82^{9}	22	81^{10}	19	....	....	....	....	....	....	85	292

FOR CHART Vc.

No. of curve.	Age in years and months.	9 Average mark.	9 Cases.	10 Average mark.	10 Cases.	11 Average mark.	11 Cases.	12 Average mark.	12 Cases.	13 Average mark.	13 Cases.	14 Average mark.	14 Cases.	15 Average mark.	15 Cases.	16 Average mark.	16 Cases.	17 Average mark.	17 Cases.	18 Average mark.	18 Cases.	19 Average mark.	19 Cases.	20 Average mark.	20 Cases.	General average.	Total cases.
1	8- 9	84^{3}	38	78^{4}	18	83^{5}	48	84^{6}	44	82^{7}	47	88^{8}	24	88^{9}	30	....	....	....	....	....	....	....	....	....	....	84	249
2	10- 0	....	....	83^{5}	44	84^{6}	48	80^{7}	41	75^{8}	18	77^{9}	20	79^{10}	20	....	....	....	....	....	....	....	....	....	....	80	191
3	9-10	....	....	90^{3}	36	87^{4}	39	89^{5}	44	91^{6}	48	94^{7}	48	95^{8}	24	92^{9}	24	90^{10}	26	92^{11}	28	92^{12}	24	....	....	91	341
4	13- 4	....	....	....	....	....	....	....	....	83^{8}	27	85^{9}	19	78^{10}	25	74^{11}	20	74^{12}	20	....	....	....	....	....	....	79	111
5	10- 1	....	....	92^{4}	42	94^{5}	40	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	93	82
6	11- 3	....	....	....	....	73^{4}	29	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	73	29
7	8- 6	94^{3}	46	76^{4}	40	79^{5}	40	82^{6}	44	78^{7}	48	....	....	....	....	....	....	....	....	....	....	....	....	....	....	82	218
8	12- 4	....	....	....	....	....	....	89^{6}	47	89^{7}	45	84^{8}	20	83^{9}	20	82^{10}	24	80^{11}	22	78^{12}	24	....	....	....	....	84	202
9	9- 6	....	....	89^{3}	38	86^{4}	33	80^{5}	48	88^{6}	46	....	....	78^{8}	20	77^{9}	23	....	....	....	....	....	....	....	....	83	208
10	8-10	91^{3}	32	90^{4}	43	91^{5}	46	89^{6}	45	83^{7}	48	82^{8}	23	85^{9}	22	86^{10}	19	....	....	....	....	....	....	....	....	86	278
11	13- 0	....	....	....	....	....	....	....	....	89^{8}	44	82^{9}	28	80^{10}	18	78^{11}	28	75^{12}	19	....	....	....	....	....	....	81	137
12	8-11	92^{3}	44	91^{4}	47	86^{5}	48	88^{6}	45	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	89	184

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[1] The table for Chart Ic may be found on page 74.

TABLE 24.—*Marks and grades*—Continued.

AVERAGE MARK, GRADE, AGE, AND NUMBER OF CASES—HORACE MANN SCHOOL GIRLS—Continued.

FOR CHART VIc.

No. of curve.	Age in years and months.	Age in years.																								General average.	Total cases.
		9		10		11		12		13		14		15		16		17		18		19		20			
		Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.		
1		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	14-0	...	...	...	...	...	...	...	...	...	...	95^{8}	36	88^{9}	28	91^{10}	20	86^{11}	25	89^{12}	20	92^{12}	20	...	...	90	149
3	9-0	94^{3}	38	91^{4}	33	86^{5}	44	91^{6}	47	88^{7}	29	91^{8}	21	89^{9}	26	...	...	...	...	...	...	...	...	...	...	90	238
4	9-5	93^{3}	38	92^{4}	36	91^{6}	44	86^{7}	44	88^{8}	24	85^{9}	23	83^{10}	24	83^{11}	28	82^{12}	24	...	...	...	...	...	...	85	285
5	12-1	...	...	...	...	...	...	91^{5}	47	91^{6}	40	86^{8}	20	81^{9}	20	76^{10}	25	84^{11}	16	81^{12}	19	...	...	...	...	84	187
6	8-7	93^{3}	33	96^{4}	38	96^{5}	44	96^{6}	48	97^{7}	48	93^{8}	20	96^{10}	24	96^{11}	24	...	...	...	...	...	...	...	...	95	279
7	11-4	...	...	...	...	82^{4}	38	84^{5}	44	88^{6}	45	86^{7}	42	75^{8}	16	78^{9}	20	...	...	...	...	...	...	...	...	82	208
8	8-10	88^{3}	38	89^{4}	36	86^{5}	44	87^{6}	40	87^{7}	48	88^{8}	20	78^{9}	20	78^{10}	24	79^{11}	15	82^{12}	22	...	...	...	...	84	307
9	10-10	...	...	...	...	94^{4}	32	89^{6}	43	94^{7}	44	92^{8}	24	88^{9}	24	90^{10}	28	88^{11}	32	87^{12}	24	...	...	...	...	90	241
10	9-8	...	...	79^{5}	32	84^{4}	37	82^{6}	47	89^{6}	48	82^{7}	48	...	...	...	...	...	...	...	...	...	...	...	...	83	212
11	9-5	89^{3}	16	70^{4}	36	81^{5}	44	89^{6}	48	93^{7}	42	82^{8}	20	...	...	...	...	...	...	...	...	...	...	...	...	84	206
12	9-1	82^{3}	8	72^{4}	40	80^{5}	44	87^{6}	43	83^{7}	43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	81	178
13	16-5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	85^{10}	16	83^{11}	16	80^{12}	20	...	...	...	...	83	52

FOR CHART VIIc.

No. of curve.	Age in years and months.	Age in years.																								General average.	Total cases.
		9		10		11		12		13		14		15		16		17		18		19		20			
		Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.		
1	12-0	...	...	...	...	...	...	88^{6}	44	91^{7}	48	86^{8}	20	83^{9}	15	86^{10}	20	86^{11}	20	85^{12}	20	...	...	...	...	86	187
2	11-6	...	...	...	...	...	...	93^{5}	44	90^{6}	40	92^{7}	48	88^{8}	16	85^{9}	20	90^{10}	20	...	...	...	...	...	...	90	188
3	10-6	...	...	...	...	86^{5}	48	93^{6}	40	92^{7}	48	92^{8}	24	93^{9}	16	91^{10}	22	95^{11}	20	95^{12}	22	...	...	...	...	92	240
4	11-,8	...	...	...	...	...	...	92^{5}	40	91^{4}	83	84^{6}	44	89^{8}	48	85^{7}	44	77^{9}	22	82^{9}	20	...	...	...	...	86	251
5	11-1	...	...	...	...	88^{3}	38	84^{4}	34	83^{5}	47	82^{6}	48	79^{7}	48	75^{8}	20	78^{9}	20	68^{10}	18	...	...	...	...	80	273
6	9-6	...	...	91^{3}	36	89^{4}	34	88^{5}	47	91^{6}	36	92^{7}	47	90^{8}	24	83^{9}	26	77^{10}	24	74^{11}	24	...	...	...	...	86	298
7	11-3	...	...	...	...	83^{4}	36	88^{5}	44	92^{6}	40	91^{7}	48	86^{8}	20	85^{9}	19	87^{10}	22	81^{11}	20	83^{12}	24	...	...	86	273
8	10-10	...	...	...	...	94^{3}	38	91^{4}	36	85^{6}	44	87^{7}	47	...	...	...	...	...	...	...	...	...	...	...	...	89	165
9	9-6	...	...	89^{5}	38	89^{4}	36	89^{6}	44	92^{6}	40	84^{7}	48	80^{8}	20	80^{9}	20	81^{10}	21	83^{11}	19	81^{12}	16	...	...	85	302
10	10-6	...	...	...	...	84^{4}	23	78^{5}	47	88^{6}	47	82^{7}	47	77^{8}	20	76^{9}	22	76^{10}	24	73^{11}	21	...	...	...	...	79	251
11	10-11	...	...	...	...	92^{3}	40	86^{4}	33	87^{5}	39	89^{6}	44	86^{7}	47	88^{8}	20	83^{9}	16	80^{10}	24	78^{11}	24	70^{12}	20	85	307

Average Mark, Grade, Age, and Number of Cases—Francis W. Parker School Boys.

FOR CHART VIIIc.

No. of curve.	Age in years and months.	Age in years.																										General average.	Total cases.
		7		8		9		10		11		12		13		14		15		16		17		18		19			
		Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.		
1	6- 7	73^1	8	73^2	8	73^3	8	73^4	8	79^5	8	79^6	8	79^7	8	79^8	8											76	64
2	8- 8					79^4	8	79^5	8	80^6	8	80^7	8	80^8	8	79^9	8											80	48
3	6-11	86^1	7	86^2	7	86^3	8	86^4	8	86^5	8	86^6	8	86^7	8													86	54
4	12-0											71^6	8	71^7	8	71^8	8	72^9	9	72^{10}	9	72^{11}	9	72^{12}	9			72	60
5	6-10	85^1	7	85^2	7	85^3	7	85^4	7	86^5	8	86^6	8	86^7	8	86^8	8	88^9	8									86	68
6	9-10							58^2	6	61^3	8	61^4	8	61^5	8	78^6	8	78^7	8	78^8	8	78^9	6	78^{10}	8			70	68
7	7-11			75^1	7	75^2	7	75^3	8	76^4	8	78^5	8	78^6	8	78^7	8	78^8	8	78^9	8							77	70
8	12- 0											79^6	8	79^7	8	79^8	8	80^9	8	80^{10}	8	80^{11}	8	80^{12}	8			80	56
9	11- 0									83^5	8	83^6	8	83^7	8	83^8	8	85^9	9	85^{10}	9	85^{11}	9	85^{12}	9			84	68
10	11- 3									67^2	8	67^3	8	67^4	8	67^5	8	67^6	8	67^7	8	67^8	8	67^9	8			67	64
11	12- 5											76^6	8	76^7	8	76^8	8	76^9	8	76^{10}	8	76^{11}	8					76	48
12	7- 0	59^1	8	59^2	8	59^3	8	59^4	8	59^5	8	59^6	8															59	48

FOR CHART IXc.

No. of curve.	Age in years and months.	7 Average mark.	7 Cases.	8 Average mark.	8 Cases.	9 Average mark.	9 Cases.	10 Average mark.	10 Cases.	11 Average mark.	11 Cases.	12 Average mark.	12 Cases.	13 Average mark.	13 Cases.	14 Average mark.	14 Cases.	15 Average mark.	15 Cases.	16 Average mark.	16 Cases.	17 Average mark.	17 Cases.	18 Average mark.	18 Cases.	19 Average mark.	19 Cases.	General average.	Total cases.
1	6- 7	80^1	8	80^2	8	80^3	8	80^4	8	81^5	8	81^6	8	81^7	8	81^8	8	80^9	8									80	72
2	6- 6	61^2	7	61^3	7	66^4	7	66^5	7	66^6	7	66^7	7	69^8	8													65	50
3	12-11													85^7	8	86^8	8	85^9	9	85^{10}	9	85^{11}	9	85^{12}	9			85	52
4	10- 8									89^6	8	89^7	8	89^8	8	91^9	9	91^{10}	9	91^{11}	9	91^{12}	9					90	60
5	12- 0											79^6	9	79^7	9	79^8	9	81^9	9	81^{10}	9	81^{11}	9					80	54
6	8- 0			83^3	8	83^4	8	83^5	8	83^6	8	83^7	8	84^8	8	83^9	9	83^{10}	9									83	66
7	11- 2									84^5	8	84^6	8	85^7	8	85^8	8	86^9	9	86^{10}	9	86^{11}	9	86^{12}	9			85	68
8	7- 0	66^1	8	66^2	8	66^3	8	66^4	8	68^5	8	68^6	8	68^7	8	68^8	8											67	64
9	11- 7											79^5	8	79^6	8	79^7	8	80^8	8	79^9	9	79^{10}	9	79^{11}	9	79^{12}	9	79	68
10	10-10									66^4	6	66^5	6	66^6	6	66^7	6	66^8	6	66^9	6							66	36
11	10- 1							81^4	8	81^5	8	83^6	8	84^7	8	83^8	8	84^9	9	84^{10}	9	84^{11}	9	84^{12}	9			83	76
12	6- 9½	79^1	8	79^2	8	79^3	8	79^4	8	81^5	8	81^6	8	81^7	8	81^8	8	79^9	7									80	71
13	10- 0							80^3	8	80^4	8	81^5	8	81^6	8	81^7	8	83^8	8	82^9	9	82^{10}	9	82^{11}	9	82^{12}	9	81	84
14	7- 7			68^1	8	68^2	8	68^3	8	68^4	8	68^5	8	68^6	8	68^7	8	68^8	8									68	64

TABLE 24.—*Marks and grades*—Continued.

AVERAGE MARK, GRADE, AGE, AND NUMBER OF CASES—FRANCIS W. PARKER SCHOOL GIRLS.

FOR CHART Xc.

No. of curve.	Age in years and months.	Age in years.																										General average.	Total cases.
		7		8		9		10		11		12		13		14		15		16		17		18		19			
		Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.	Average mark.	Cases.		
1	7- 7			88^{1}	8	88^{2}	8	88^{3}	8	88^{4}	8	88^{5}	8	88^{6}	8	88^{7}	8											88	56
2	10-10									79^{5}	8	79^{6}	8	79^{7}	8	79^{8}	8	76^{9}	9	76^{10}	9	81^{11}	9	81^{12}	9			79	68
3	7-11			84^{2}	8	84^{3}	8	84^{4}	8	84^{5}	8	84^{6}	8	84^{7}	8	84^{8}	8											84	56
4	10- 8									83^{4}	8	83^{5}	8	83^{6}	8	84^{7}	8	84^{8}	8	84^{9}	9	84^{10}	9					84	58
5	14- 0															85^{8}	8	85^{9}	9	91^{10}	9	92^{11}	9	93^{12}	9			80	44
6	9- 8							82^{4}	7	82^{5}	7	82^{6}	7	82^{7}	7	82^{8}	7	82^{9}	7	82^{10}	7	83^{11}	8					82	57
6a	11- 2									73^{5}	5	73^{6}	5	73^{7}	5	73^{8}	5	75^{9}	6	75^{10}	6	75^{11}	6	75^{12}	9			74	47
7	6- 8	81^{1}	7	81^{2}	7	80^{3}	8	80^{4}	8	80^{5}	8	80^{6}	8	80^{7}	8	80^{8}	8	79^{9}	8	79^{10}	9							80	80
8	6- 7	85^{1}	8	85^{2}	8	85^{3}	8	88^{4}	8	88^{5}	8	88^{6}	8	88^{7}	8													87	56
9	8- 7					85^{2}	8	85^{3}	8	85^{4}	8	85^{5}	8	94^{6}	8	94^{7}	8	94^{8}	8	93^{9}	9	93^{10}	9					89	74
10	10- 5							81^{4}	8	81^{5}	8	81^{6}	8	81^{7}	8	81^{8}	8	81^{9}	9	81^{10}	9	81^{11}	9	81^{12}	9			81	76
11	7- 0	85^{1}	8	85^{2}	8	85^{3}	8	85^{4}	8	86^{5}	8	86^{6}	8	85^{7}	8	85^{8}	8	84^{9}	8									85	72
12	11- 8											73^{5}	8	73^{6}	8	73^{7}	8	73^{8}	8	73^{9}	8	73^{10}	8	73^{11}	8	73^{12}	8	73	64

FOR CHART XIc.

1	6- 9	85^{1}	8	85^{1}	8	85^{3}	8	85^{4}	8	85^{5}	8	85^{6}	8	85^{7}	8	79^{8}	8	77^{9}	9	83^{10}	9							83	82
2	10- 8									66^{4}	8	66^{5}	8	66^{6}	8	66^{7}	8	79^{8}	8	79^{9}	8	79^{10}	8	79^{11}	8	79^{12}	8	73	72
3	8- 7			81^{3}	8	81^{4}	8	81^{5}	8	80^{6}	8	75^{7}	8	76^{8}	8	81^{9}	9	71^{10}	9									78	66
4	8- 3			85^{3}	8	85^{4}	8	85^{5}	8	86^{6}	8	88^{7}	8	90^{8}	8	91^{9}	8											87	56
5	10- 9									78^{4}	8	78^{5}	8	78^{6}	8	78^{7}	8	78^{8}	8	78^{9}	8	78^{10}	8	78^{11}	8	78^{12}	8	78	72
6	10- 5							84^{5}	8	84^{6}	8	84^{7}	8	84^{8}	8	84^{9}	7											84	39
7	11- 1									76^{4}	8	76^{5}	8	76^{6}	8	76^{7}	8	76^{8}	8	76^{9}	9	76^{10}	9	77^{11}	9	77^{12}	9	76	76
8	10- 1							86^{5}	8	86^{6}	8	86^{7}	8	86^{8}	8	86^{9}	8	86^{10}	8	86^{11}	8							86	56
9	9-10							84^{5}	9	84^{6}	9	84^{7}	9	84^{8}	9	84^{9}	10	84^{10}	10	84^{11}	10							84	66

(E) INDIVIDUAL NOTES ON SCHOOL PROGRESS.[1]

Notes on the school standing of individuals whose marks and grades appear in Table 24 and Chart IIc.

1. Still in school.

2. Have marks for one year only.

3. Took part work during third grade; absent second term of fourth because of whooping cough; still in school.

4. Left at beginning of eleventh grade.

5. Part work in eighth grade; absent fourth term of eighth, first and second terms of ninth; graduated.

6. Regular work; conditioned in French during eighth grade; in Latin during eleventh; graduated.

7. Part work in third grade; withdrew at end of seventh.

8. In third grade.

9. In third grade.

10. Regular work; conditioned in French during seventh grade; in Latin during eighth; in English, Latin, and history during ninth; in German during eleventh; still in school.

11. Ill during fourth term of third grade; repeated grade following year; absent during second and third terms of eighth; still in school.

12. In school; skipped fourth grade.

13. Conditioned in French during eighth grade; in Latin during ninth, tenth, and eleventh.

14. Left school at beginning of fourth grade.

15. Skipped seventh grade; conditioned in Latin during eighth; in Latin and algebra during eleventh; graduated.

Notes on the school standing of individuals whose marks and grades appear in Table 24 and Chart IIIc.

1. Part work in third grade; still in school.

2. Conditioned in arithmetic during third grade; in history, geography, German during seventh; in Latin and algebra during eighth; withdrew.

3. Absent during second, third, and fourth terms of eighth grade; conditioned in Latin during ninth; not promoted; withdrew.

4. Conditioned in Latin during ninth grade; in school.

5. Absent during fourth term of fifth grade; conditioned in English and French during eighth; part work in ninth; withdrew.

6. Normal work.

7. Normal work; graduated.

8. Conditioned in English and biology during eighth grade; in Latin and history during ninth; in Latin and algebra during tenth; withdrew.

9. Out of school during fourth term of eighth grade and third term of ninth.

10. Failed to be promoted at end of fifth grade; in school.

11. Absent fourth term of fifth grade; conditioned in arithmetic during sixth; in English and algebra during eighth; withdrew.

12. Poor work in lower grades but improved; conditioned in history during ninth grade; in English, Latin, algebra, geometry, physics during tenth; withdrew.

13. Repeated third grade; conditioned in English and history during fifth.

14. Withdrew from school for one year between fifth and sixth grades; conditioned in algebra during ninth; in geometry during tenth; chemistry during eleventh; graduated.

15. Promoted conditionally from fourth grade; conditioned in French during seventh grade; in algebra during eighth; withdrew.

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[1] The notes for Chart Ic may be found on page 76.

Notes on the school standing of individuals whose marks and grades appear in Table 24 and Chart IVc.

1. Conditioned during tenth grade; graduated.
2. Graduated.
3. Conditioned in algebra during ninth grade.
4. Part work in third grade; skipped fifth; in school.
5. Part work in third grade; absent third term of fourth, whooping cough; in school.
6. Conditioned in algebra during eighth grade; in history during tenth; in school.
7. No record for sixth grade; conditioned in history and arithmetic during seventh; in Latin and history during ninth; in school.
8. Conditioned in algebra during ninth grade.
9. In school.
10. Conditioned in history and geometry during eleventh grade, on account of absence; graduated.
11. In sixth grade two years with good records; frequently absent in eighth; in school.

Notes on the school standing of individuals whose marks and grades appear in Table 24 and Chart Vc.

1. Withdrew at end of second term of fourth grade; returned in fifth; in school.
2. Normal work.
3. Large number of subjects and high grades.
4. Conditioned in Latin during eleventh grade; graduated.
5. Two years' records; in school.
6. One year's records; absent during fourth term; withdrew.
7. Normal work.
8. Normal work; graduated.
9. No record for eighth grade; conditioned in algebra during tenth.
10. Normal work; in school.
11. Conditioned in Latin and history during eighth grade; in Latin and Greek during ninth; graduated.
12. Normal work; left school.

Notes on the school standing of individuals whose marks and grades appear in Table 24 and Chart VIc.

1. Record not available.
2. Normal work; graduated.
3. Normal work; in school.
4. Conditioned in biology during eighth grade; graduated.
5. Conditioned in Latin during ninth grade; graduated.
6. Excellent record; in school.
7. Conditioned in Latin during ninth grade; in school.
8. Conditioned in Latin, history, German, during ninth grade; in algebra during tenth; graduated.
9. Normal work; graduated.
10. In school.
11. Part work in third grade; conditioned in arithmetic during fourth; in school.
12. Part work in third grade; withdrew end of second term, returned in fall; in school.
13. Normal work; graduated.

Notes on the school standing of individuals whose marks and grades appear in Table 24 and Chart VIIc.

1. Normal work; graduated.
2. No record after tenth grade.
3. Normal work; graduated.

4. Conditioned in French during seventh and eighth grades.
5. Conditioned in geography and German during seventh grade; in Latin during eighth; in French during ninth; in Latin, history, geometry during tenth.
6. Conditioned in algebra during ninth grade; in Latin during eleventh; in school.
7. Normal work; graduated.
8. Normal work; graduated.
9. Normal work; graduated.
10. Lazy; in school.
11. Conditioned in Latin during eleventh grade; graduated.

Notes on the school standing of individuals whose marks and grades appear in Table 24 and Chart VIIIc.

1. Poor in French from third grade.
2. Entered fourth grade.
3. Entered kindergarten.
4. Entered sixth grade; conditioned annually in spelling; graduated.
5. Entered first grade; normal work.
6. Entered second grade; poor in German after fourth; poor in spelling.
7. Entered kindergarten; poor in spelling throughout course.
8. Entered sixth grade; normal work; graduated.
9. Entered fifth grade; normal work; graduated.
10. Poor in spelling and mathematics throughout course.
11. Entered sixth grade; normal work.
12. Entered kindergarten; poor in English, German, reading, spelling.

Notes on the school standing of individuals whose marks and grades appear in Table 24 and Chart IXc.

1. Normal work.
2. Entered second grade; poor in English and spelling.
3. Entered seventh grade; normal work.
4. Entered sixth grade; graduated; normal work.
5. Entered sixth grade; normal work.
6. Entered third grade; normal work; graduated.
7. Entered fifth grade; normal work; graduated.
8. Entered kindergarten; poor in spelling and reading.
9. Entered fifth grade; normal work; graduated.
10. Entered fourth grade; poor in English.
11. Entered fourth grade; normal work; graduated.
12. Entered first grade; normal work.
13. Entered third grade; normal work.
14. Entered first grade; poor in spelling and mathematics.

Notes on the school standing of individuals whose marks and grades appear in Table 24 and Chart Xc.

1. Normal work.
2. Entered fifth grade; normal work; graduated.
3. Entered second grade; normal work.
4. Entered fourth grade; normal work.
5. Normal work; graduated.
6. Normal work.
7. Entered first grade; normal work.
8. Entered first grade; normal work.
9. Entered second grade; normal work.
10. Normal work; graduated.
11. Entered kindergarten; normal work.
12. Poor in spelling.

Notes on the school standing of individuals whose marks and grades appear in Table 24 and Chart XIc.

1. Normal work.
2. Normal work.
3. Normal work; withdrew at tenth grade.
4. Normal work.
5. Normal work; graduated.
6. Normal work.
7. Normal work; graduated.
8. Normal work; withdrawn at end of eleventh grade.
9. Normal work; withdrawn at end of eleventh grade.

Notes on the school standing of individuals whose marks and grades appear in Table 24.

1. Conditioned in spelling and handwork regularly.
2. Normal work; withdrawn at end of eleventh grade.
3. Poor in French and spelling; in school.
4. Entered kindergarten; died in seventh grade.
5. Entered kindergarten; normal work; withdrew at end of sixth grade.
6. Poor health, poor work; in school.
7. Entered first grade; normal work.
8. Entered kindergarten; poor in spelling and mathematics.
10. Entered second grade; normal work; graduated.

IV. HISTORICAL SUMMARY.

(A) THE RISE OF PHYSICAL MEASUREMENTS.

Scientific anthropometry arose in the main from the artists' desire to find the best proportions for the beautiful forms which they wished to represent. For example, Phidias, it has been said, used 20 models in order that he might assemble the most beautiful parts of each into one figure. As early as 1770 Sir Joshua Reynolds called attention, in an address delivered before the Royal Academy of Fine Arts, to the differences in the measurements of the human form from childhood to adult life. But it was to M. Quetelet, who coined the word anthropometry, that credit should be given for the first scientific study of physical growth, since his work was pursued from the standpoints of art and the scientific method of empirical measurements and induction in 1836. Quetelet's data were meager, and he failed to discover what has since been verified by all investigators, that girls are taller and heavier than boys during the early adolescent period.

The vast amount of work that has been done in the field of experimental measurements and physical tests consists largely of tabulated and descriptive reports in a wide range of disconnected fields of endeavor. Much of the work is only suggestive and will have to be done again under standardized conditions in order to determine definite correlations. One of the most varying factors is that of age, since many investigators use the last birthday, others the nearest birthday, some the next birthday, others the age between the past and future birthdays, and still others try to calculate exact birthdays. In not a single case, as far as I have been able to determine, have the measurements been taken on the birthday except by chance. Many investigators measure the children with their clothing on, and no calculations are accurate which aim to give the height of the shoe heel or the weight of the clothes. Again, many of the measurements are made, in a number of investigations, by amateurs; it is very difficult to get the measurements of trained anthropometrists to agree.

In spite of the heterogeneous material on hundreds of thousands of children which has been collected, much valuable and painstaking work has been done which will be of direct scientific significance and of direct assistance to the physical director, the physician, the hygienist, anthropologist, educational psychologist, and educator. It is hoped that this monograph will not only make a distinctly new contribution to the important field of scientific and experimental education, but that it will assist in making more accessible the work previously done.

The first important investigation on the physical measurements of adolescent boys that I have been able to find was published in 1854 by Zeissing in his study of Belgian children. Following this, in 1860, Cromwell studied the growth of Manchester school children for the ages from 8 to 18, and discovered the general law which has been verified by every authority since that date with the exception of Quetelet for normal children and Goddard for feeble-minded children, i. e., *girls are taller and heavier than boys from the approximate ages of 11 to 14.* The boys then become taller and heavier and continue their growth longer.

The measurements of adolescent boys were published by G. C. Steèt in 1874, in the form of a distribution table giving the relation of weight to height, which, so far as I can ascertain, is the first use of the *weight-height index* as an expression of the robustness of an individual. The first report was soon supplemented and improved by Roberts in 1876 and Bowditch in 1877. The following year, 1878, Roberts published his "Anthropometry," which gives in index columns, age columns, and result columns conclusions based on 27,640 males between the ages of 4 and 50 years from the records of Dr. Bowditch, of Boston, Mass., and later gives a table showing the comparative measurements of 59,077 males, including 11 classes of individuals. In 1883 the final report of the anthropometric committee, of which Francis Galton was chairman, was drawn up and submitted by Roberts and Sir R. W. Rawson. In England the study of growth has been mainly by men who were interested in the general laws of anthropology, while in America the work was originally pursued for its educational value and more recently for its correlation in psychological studies.

Following Quetelet's study of the individuals for each age from birth to 21 years, Bowditch made in 1875 his extensive investigation on over 24,000 Boston school children; during the same year the Provost General of the United States published the statistics of the American armies comprising 190,621 male whites ranging from 16 to 42 years of age. In 1878 Roberts began to publish his tables on over 30,000 individuals of all classes in England, which were followed by the Report of the Anthropometric Committee on Schools, Military and Naval Colleges, based on 29,405 males and females. The following year Peckham began his investigations in America and Hertel in Denmark. The subsequent investigations of the more general type were Key's, in Sweden in 1889, where 18,000 children were measured; Geisslers's, in Germany, where the records from 21,173 children were used; and Porter's, in America, in 1893, where 21,173 children were studied in relation to physical growth and mental development. Since this date more detailed work has been done with special ages, nationalities, sexes, and classes.

Roberts began the work of differentiating the classes and found the children of the favored classes were taller and heavier than those of the artisan classes; this view has been substantiated by practically all other authorities who have made such distinctions in the data. In addition to the numerous special groups of children measured, the most valuable individual study is that of Wiener's four sons from birth to 20 years of age. Among the other individual studies are Camerer's, Peckham's, King's, Landsberger's, and Wissler's which is especially valuable.

The first study dealing with feeble-minded children as a class was made by Roberts in 1878 on about 130 children. The second significant report was made by Tarbell in 1881; a third by Shuttleworth in 1884 on 1,209 children, followed by Wylie's in 1889 and 1903 on about 400 children. Goddard's investigation covering over 10,000 cases is the most painstaking and valuable in this field.

(B) SOME GENERAL CONCLUSIONS.

1. HEIGHT.

Periods of growth.—First-born children exceed later-born children in height (Boas). Short children continue longer to grow than tall children (Boas).

The most rapid growth occurs during the first year, and the rate is approximately the same for boys and girls (Burk).

The period of accelerated growth appears just before puberty and the most rapid adolescent growth is from 14 to 15 (Hall).

Large children have the period of accelerated growth in height earlier than short children (Bowditch). This conclusion is not upheld by Boas.

The comparative rate of growth in height of dull, mediocre, and precocious children of the same sex is the same at all ages from 7 to 16, inclusive (Porter).

There is a close correlation between height and pubertal maturation, as shown by pubescence (Crampton, Weissenberg, Foster).

Manner of growth.—Growth in height is rhythmic, alternating periods of growth with periods of inactivity (Hall, Burk).

The body does not grow relatively larger but by parts (Vierordt).

The body normally increases from birth to maturity 3 times in height (Hall).

Children have each year a maximal, a middle, and a minimal period of growth; in the maximal period the daily growth is 2½ times as much as in the middle period, while the middle period is 2 times as great as the minimum (Malling-Hansen).

The fluctuations in the growth of a youth, a boy, and an infant are relatively the same (Camerer).

Physical and mental development.—Dull children are shorter than precocious children of the same age or average children (Porter, Christopher).

Early pubescence favors good scholarship; late pubescence, poor scholarship (Crampton).

There is no correlation between academic examinations in college and physical measurements (Galton).

Successful pupils are taller than unsuccessful, and the rate of growth is quicker than in the successful (Gratsianoff).

Sex.—Boys are taller than girls at all ages except the period from about 11 to 14, when girls excel in both height and weight (Smedley).

Growth is more variable with girls than with boys (Boas).

The relation of weight and height in growing children is such that at heights below 58 inches boys are heavier than girls in proportion to their stature. At heights above 58 inches the reverse is true (Bowditch).

Girls nearly cease to grow at about 17 years of age (Peckham). This view is substantiated by practically all investigators.

Boys cease growing at about 23 years of age (Sargent, Seaver). There is occasionally a decrease in height after 23. Gould found that the total height of men was not attained until the age of 27.

From 15 to 18 sitting height in girls increases only 2 inches, but over 4 inches in boys. At 14 the lower extremities of girls almost cease to grow, while those of boys increase 4 inches between 14 and 19 (MacDonald).

Heredity.—The fact that we have certain particular men and women for our ancestors determines to a large extent what particular height we shall have (Thorndike).

Environment.—Height is conditioned to some extent by the nutrition of the body, by exercise, by disease, in short, by all agents that influence bodily functions in general (Thorndike, Hrdlicka, Burk).

The height of American-born men is modified by the density of population. Urban life decreases stature from 5 years on (Peckham).

Country boys are taller than city boys (Galton).

There is apparently an influence of climate upon growth in height (Baxter).

Social or environmental conditions may influence the rate of growth at different stages of development (Meumann).

It is possible that the late period of growth is inhibited by improper hygienic conditions more than earlier periods (Hall).

Disease.—Accelerated growth and better resistance of disease go together (Key).

The age of greatest growth, the adolescent period, is the age of greatest vitality and fewest deaths (Hartwell).

There is 5 to 10 per cent less sickness among boys than girls (Schmidt-Monnard).

Arrest of growth frequently precedes disease in childhood and should be considered a danger signal (Boulton).

Classes.—Children of the favored or nonlaboring class are taller than those of the working class or less favored (Bowditch, Roberts, Geissler, Baxter). Boudin does not hold this theory. This difference is especially noticeable in the girls of the two classes (Paglianis).

The pubertal period of superiority of girls in height and sitting height is nearly a year longer in the laboring classes than in the nonlaboring classes, and the children of the latter show more ability in their studies than the former (MacDonald, Roberts).

Children under poor nutritive conditions grow as fast or faster from 6 to 17 years of age, but they are shorter before that time than the well-nourished child, and hence never attain to equal height (Bowditch, Burk).

College students have increased in height during the past 25 years (Sargent).

Nationality.—Children of American-born parents are in this country taller than children of foreign-born parents (Bowditch, Peckham).

Race seems to be more important than social or environmental conditions in determining absolute growth, but the latter conditions may influence the rate of growth at different stages of development (Meumann).

American children are taller than European children; Americans are taller than Europeans (Dickson).

Children and adults in the different parts of the United States vary in height (Barnes, Baxter, Gould, Dickson).

White children not only have a greater standing height than colored children, but their sitting height is still greater (MacDonald, Greenwood).

Children of Irish parents are taller than those of German parentage; variations are due to stock or race (Peckham).

In intermarriage between the Germans and the Americans the tendency is to take the height of the taller parent (Peckham).

American boys excel in height only during pubescent years; later they are overtaken in height by Swedish, Danish, and Dutch (Hall).

Filipino children show less sex variations in height than Americans (Bobbitt).

Chinese children are shorter than the average European (Bobbitt, Misawa).

Abnormal.—Children with abnormalities are inferior in height to children of normal growth (MacDonald).

Feeble-minded are, as a rule, shorter than the normal child, and the lower the grade the greater the divergence (Goddard).

The decrease in height is marked in defective children after 18 years of age (Goddard).

The average height of the feeble-minded approximates the minimum of the normal (Wylie, Goddard).

Delinquent girls are as tall as the average girl (Tallant).

2. WEIGHT.

Periods of growth.—First-born children exceed later-born children in weight (Boas).

Large children have the period of accelerated growth in weight earlier than short children (Bowditch).

The comparative weight growth of dull, mediocre, and precocious children is the same at all ages from 7 to 16 inclusive (Porter).

There is a close correlation between weight and pubertal maturation as shown by pubescence (Crampton, Weissenberg, Foster).

Manner of growth.—Growth is rhythmic, alternating periods of weight growth with periods of inactivity (Hall, Burk).

The body normally increases from birth to maturity 20 times in weight (Hall).

Children increase in weight by day and decrease by night (Malling-Hansen).

The fluctuations in the growth of a youth, a boy, and an infant are relatively the same (Camerer).

The physical and mental development.—Dull children are lighter than precocious children (Porter, Christopher).

The acceleration in weight preceding puberty takes place at the same age in dull, mediocre, and precocious children (Porter).

There is no correlation between academic examinations in college and physical measurements (Galton).

Successful pupils are larger than unsuccessful, and the rate of growth is quicker in the successful (Gratsianoff).

Sex.—Boys are heavier than girls at all ages, except the period from about 11 to 14, when girls excel in weight (Smedley).

Boys now are slightly lighter than in 1876 and girls are heavier (Harrington).

Environment.—Weight is conditioned by the nutrition of the body, by exercise, by disease, in short, by all agents that influence bodily functions in general (Thorndike, Hrdlicka, Burk).

Country boys are heavier than city boys (Galton).

Accelerated growth and better resistance of disease go together (Key).

Loss of weight frequently precedes disease in childhood and should be considered a danger signal (Boulton).

Classes.—Children of the favored classes are heavier than children of the working class (Bowditch, Roberts).

Boys of the favored class in America are heavier than the same class in England (Bowditch).

The pubertal period of superiority of girls in weight is nearly a year longer in the laboring class than in the nonlaboring class (MacDonald).

College students have increased in weight in the last 25 years (Sargent).

Agricultural students in college are heavier than those of other classes (Elson).

Nationality.—Children of American-born parents are in this country heavier than children of foreign-born parents (Bowditch, Peckham).

The average American is heavier than the average European (Dickson).

Children and adults vary in weight in different parts of the United States (Barnes, Baxter, Gould, Dickson).

Colored children have a greater weight in proportion than white children (MacDonald, Greenwood).

Filipino children show less sex variation in weight than Americans (Bobbitt).

Chinese children are lighter than the average European (Misawa, Bobbitt).

Europeans increase more in weight than Americans (Dickson).

Abnormal.—Defectives are heavier at birth than normal children (Wylie, Goddard).

Children with abnormalities are lighter than normal children (MacDonald).

Feeble-minded children are lighter than normal children, and the lower the mental grade the greater the divergence from the normal (Goddard).

Delinquent and truant boys are, as a rule, lighter than boys in the public school (Smedley).

Delinquent girls from a rural reformatory school are as heavy as the average child (Tallant).

3. LUNG CAPACITY.

Growth.—Lungs share to a marked degree in the augmented development of adolescence (Hall).

Lungs continue to grow in weight until old age; in youth they constitute from 1½ to 2 per cent of body weight, in maturity from 2½ to 3⅗ (Hall).

The maximal capacity is at 19, according to Beyer, while other authorities place it at 35.

The greatest lung capacity occurs in the child naturally after the year of greatest aggregate increase (Hall).

For each centimeter of increase or decrease of stature above or below the mean, there is a corresponding rise or fall of the vital capacity, amounting in men to 60 cubic centimeters, in women to 40 cubic centimeters (Whipple).

Weight increases more than vital capacity, while vital capacity increases more than height (Kottelman, MacDonald).

Physical exercise may increase vital capacity somewhat; tight clothing, disease, and other unfavorable factors will decrease it (Whipple).

Sex.—Girls increase most rapidly in vital capacity from 12 to 14, after which the increment is at a diminished rate, and apparently ceases to increase altogether at 20 (Smedley).

Boys take a sudden start upward at 14, and continue a rapid rise until at least 19½ (Smedley).

Boys have a larger vital capacity than girls at all ages (all investigators).

Mental.—The lung capacity was found to be much greater in children whose standing in school was high and distinctly inferior in a school for laggards (Smedley).

Vital capacity of feeble-minded children is below normal (Goddard), as is also that of retarded children (De Busk).

The most complete and significant table of growth so far published for general purposes is that by Burk, based on Boas's data for height, and data from Bowditch, Peckham, and Porter for weight. These tables are as follows:

(C) NORMS.

TABLE 25.—*Average American height mathematically calculated by Dr. Franz Boas from the data of 45,151 boys and 43,298 girls in the cities of Boston, St. Louis, Milwaukee, Worcester, Toronto, and Oakland (Cal.); also absolute and percentage annual increases of same.*

Approximate average age.	Boys.				Girls.			
	Number of observations.	Average for each year.	Absolute annual increase.	Annual increase.	Number of observations.	Average for each year.	Absolute annual increase.	Annual increase.
		Inches.	*Inches.*	*Per cent.*		*Inches.*	*Inches.*	*Per cent.*
5½	1,535	41.7			1,260	41.3		
6½	3,975	43.9	2.2	5.3	3,618	43.3	2.0	4.8
7½	5,379	46.0	2.1	4.8	4,913	45.7	2.4	5.5
8½	5,633	48.8	2.8	6.1	5,289	47.7	2.0	4.4
9½	5,531	50.0	1.2	2.5	5,132	49.7	2.0	4.2
10½	5,151	51.9	1.9	3.8	4,827	51.7	2.0	4.0
11½	4,759	53.6	1.7	3.3	4,507	53.8	2.1	4.1
12½	4,205	55.4	1.8	3.4	4,187	56.1	2.3	4.3
13½	3,573	57.5	2.1	3.8	3,411	58.5	2.4	4.3
14½	2,518	60.0	2.5	4.3	2,537	60.4	1.9	3.2
15½	1,481	62.9	2.9	4.8	1,656	61.6	1.2	2.0
16½	753	64.9	2.0	3.2	1,171	62.2	.6	1.0
17½	429	66.5	1.6	2.5	790	62.7	.5	.8
18½	229	67.4	.9	1.4				

Average American weight mathematically calculated from the data of about 68,000 children in the cities of Boston, St. Louis, and Milwaukee; also absolute and percentage annual increases of same.

Age.	Boys.			Girls.		
	Average for each age.	Absolute annual increase.	Annual increase.	Average for each age.	Absolute annual increase.	Annual increase.
	Pounds.	*Pounds.*	*Per cent.*	*Pounds.*	*Pounds.*	*Per cent.*
6½	45.2			43.4		
7½	49.5	4.3	9.5	47.7	4.3	9.9
8½	54.5	5.0	10.1	52.5	4.8	10.0
9½	59.6	5.1	9.3	57.4	4.9	9.3
10½	65.4	5.8	9.7	62.9	5.5	9.6
11½	70.7	5.3	8.1	69.5	6.6	10.5
12½	76.9	6.2	8.7	78.7	9.2	13.2
13½	84.8	7.9	10.3	88.7	10.0	12.7
14½	95.2	10.4	12.3	98.3	9.6	11.9
15½	107.4	12.2	12.8	106.7	8.4	8.5
16½	121.0	13.6	12.7	112.3	5.6	5.2
17½				115.4	3.1	2.8
18½				114.9		

Table 25 of Boas (see above) shows "the growths in height and weight and the annual absolute and proportional increases for what might be termed the average American boy and girl. The average in Table I (weight) has been calculated by the mathematician M. de Perott upon the following plan: The averages given by Bowditch from 24,500 children of Boston, by Porter from 34,500 children of St. Louis, and by Peckham from 9,600 children of Milwaukee—making nearly 69,000 children all together—have been thrown together, but not averaged directly. At each age the number of children has been massed from these three sources and each of the three averages allowed to influence the average of the whole in proportion to the number of children each city contributes. Thus, for example, suppose at the age of 10 years St. Louis contributes 5,000 children, Boston 4,000, and Milwaukee 1,000—altogether there would be 10,000 children of that age—the averages of the three cities would therefore influence the final average in the ratio of 5, 4, and 1, on the same principle we use in partnership."

A significant table bearing on the relation of mental development to growth was compiled and published by Porter. The table for weight is as follows:

TABLE 26.—*Relation of precocity to weight as indicated by distribution of heavy and light children of the same age in the different grades of St. Louis schools (after Porter).*

Age at nearest birthday.	Mean weight (boys, girls).	Grade.									
		Kindergarten.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	High school.
	Lbs.										
6	43.74	43.58	45.29	....	....	....	....	....	....	....	....
	41.84	41.65	45.08	....	....	....	....	....	....	....	....
7	47.73	45.58	48.48	52.00	....	....	....	....	....	....	....
	45.84	43.87	46.76	49.88	....	....	....	....	....	....	....
8	52.58	47.80	51.79	54.43	57.00	....	....	....	....	....	....
	50.35	46.50	49.60	52.10	53.17	....	....	....	....	....	....
9	57.75	....	55.87	57.64	59.66	61.75	....	....	....	....	....
	55.17	....	52.57	55.44	57.18	60.00	....	....	....	....	....
10	62.48	....	60.19	61.14	64.00	64.91	....	....	....	....	....
	60.46	....	57.00	59.59	61.15	61.64	....	....	....	....	....
11	68.47	....	63.50	65.45	68.12	69.24	71.29	73.34	....	....	....
	65.64	....	66.34	62.95	65.50	66.77	68.12	....	....	....	....
12	73.61	....	70.00	69.50	72.17	73.86	74.69	77.29	76.50	....	....
	73.23	....	71.75	69.80	71.50	72.74	75.13	75.92	78.50	....	....
13	79.85	....	....	74.25	75.95	78.43	80.90	82.17	83.50	82.00	....
	83.73	....	....	79.50	76.50	81.92	82.78	86.95	87.63	88.50	....
14	88.08	....	....	....	81.00	84.00	87.83	87.20	93.63	97.50	86.50
	93.94	....	....	....	90.50	87.17	92.67	94.64	96.15	99.00	103.12
15	100.20	....	....	....	....	89.00	95.33	99.17	105.50	105.17	105.08
	103.20	....	....	....	....	98.50	100.96	99.83	104.00	104.58	105.15
16	114.17	....	....	....	....	....	....	114.50	104.00	114.00	123.00
	110.06	....	....	....	....	....	....	108.12	107.38	110.29	113.57
17	115.69	....	....	....	....	....	....	....	....	111.00	116.00

"The truth which the table expresses is very plain. It declares in unmistakable lines that precocious children are heavier and dull children lighter than the mean child of the same age. It establishes a physical basis of precocity and dullness.

"Whether means or averages are the more trustworthy tools in investigations of this sort is a matter of opinion. So long as their respective value is a subject of controversy investigators will accept no results as final which can be supported only by means. It must therefore be my first concern to show that the law *mean precocity is related to mean physical development* may with equal truth be written *average precocity is related to average physical development.*"

The summaries given in the table following are included primarily for their historical suggestive value.

TABLE 27.—*Average height of men; 100 recruits from each State (Dickson, 1857).*[1]

	Feet.		Feet.
New York	5.6505	Ohio	5.7537
New Jersey and Delaware	5.6509	Indiana	5.7604
Pennsylvania	5.6756	Alabama	5.7647
Massachusetts and Connecticut	5.6821	Illinois	5.7696
Vermont and New Hampshire	5.6951	South Carolina	5.7729
Maryland	5.7130	Kentucky	5.7729
Missouri	5.7162	Tennessee	5.7779
Maine	5.7314	North Carolina	5.7814
Virginia	5.7488	Georgia	5.8272

Blond races are characterized by superior stature. The American Indian is a striking exception. Even though only 121 Indians were measured for this table, Gould finds, in an investigation of 517 Indians, a mean height of 68.225 inches.

TABLE 28.—*Height as affected by nationality.*

Order of superiority.	Nativity.	Number of men examined.	Mean height (inches).
1	United States, Indians	121	67.934
2	United States, whites	315,620	67.672
3	Norway	2,290	67.467
4	Scotland	3,476	67.066
5	British America	21,645	67.014
6	Sweden	1,190	66.896
7	Ireland	50,537	66.741
8	Denmark	383	66.648
9	Holland	989	66.637
10	Hungary	89	66.584
11	England	16,196	66.577
12	Germany	54,944	66.536
13	United States, colored	25,828	66.531
14	Wales	1,104	66.418
15	Russia	122	66.393
16	Switzerland	1,802	66.381
17	West Indies	580	66.307
18	France	3,243	66.277
19	Poland	171	66.211
20	Mexico	91	66.110
21	Italy	339	66.000
22	South America	79	65.899
23	Spain	148	65.635
24	Portugal	81	65.432

While blond races have statures superior to those of dark races, the same condition by no means holds in detail among themselves, as is shown by the following table. Stature, then, depends upon race, and not upon complexion.

TABLE 29.—*Height and complexion.*

Nativity.	Light complexioned.	Dark complexioned.	Total.	Mean height of light complexioned.	Mean height of dark complexioned.
United States	126,445	64,176	190,621	67.652	67.775
British America	9,506	4,859	14,365	67.169	67.073
England	6,804	2,845	9,649	66.582	66.621
Ireland	20,378	8,617	28,995	66.755	66.755
Germany	20,559	9,041	29,600	66.531	66.536

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[1] Medical statistics of the Provost Marshal General's bureau, Vol. I, p. 23.

TABLE 30.—*Stature of adult males arranged in order of greatest stature (Roberts's Manual).*

Race or nationality.	Authority.	Height (inches).
Polynesians	Garnat, Beechey, Porter, Cook, Rollins, etc	69.33
English (professional class)	Anthropological committee	69.14
Patagonians	Musters, D'Orbigny	69.00
Angamis of the Naga Hills	Woodthorp	69.00
Negroes of the Kongo	Topinard	68.95
Scotch (all classes)	Anthropological committee	68.71
Kafirs (South Africa)	Sir A. Smith	68.50
Iroquois Indians	Gold	68.28
Todas of the Nilghiries	Marshall	67.95
Negroes of Calabar	Topinard	67.95
North American Indians	Baxter	67.93
Irish (all classes)	Anthropological committee	67.90
United States whites (all classes)	Baxter	67.67
English (all classes)	Anthropological committee	67.66
Norwegians	Beddoe, Baxter	67.66
Zulus	Roberts	67.19
English (laboring classes)	Anthropological committee	67.08
Canadians	Baxter	67.01
Tajiks of Ferghana and Samarkand	Ujfalvy	67.10
Swedes (immigrants to United States)	Baxter and Beddoe	66.90
Chippewa Indians	Oliver	66.90
Kabyles	Topinard	66.85
Welsh (all classes)	Anthropological committee	66.66
Danes (immigrants to United States)	Baxter	66.65
Dutch (immigrants to United States)	do	66.62
American negroes	do	66.62
English (immigrants to United States)	do	66.58
Hungarians (immigrants to United States).	do	66.58
English Jews	Anthropological committee	66.57
Germans (immigrants to United States)	Baxter	66.54
Swiss of Geneva	Dunant	66.43
Swiss (immigrants to United States)	Baxter	66.38
Russians (immigrants to United States)	do	66.38
Belgians	Quetelet	66.38
French (immigrants to United States)	Baxter	66.23
Poles (immigrants to United States)	do	66.20
French (upper classes)	De Quatrefages	66.14
Germans	Novara	66.10
Mexicans	Baxter	66.10
Berbers of Algeria	Topinard	66.10
Arabs	Various	66.08
Usbeks of Ferghana and Samarkand	Ujfalvy	66.08
Javanese	Novara	66.08
Russians	Shultz	66.04
Italians (immigrants to United States)	Baxter	66.00
South Americans (immigrants to United States).	do	65.90
Australian aborigines	Various	65.68
Austrian Slavs	Ujfalvy	65.66
Galchas (Iranian mountaineers)	do	65.66
Spaniards (immigrants to United States)	Baxter	65.66
Berbers of Algeria	Topinard	65.62
Portuguese (immigrants to United States).	Baxter	65.43
Ainos	Rosky	65.33
Austrian Germans	Novara	65.27
French (working classes)	De Quatrefages	65.24
Esquimaux of North America	Various	65.10
Hungarians (military statistics)	Scheiber and Beddoe	65.04
Caucasians	Shortt	64.93
New Guinea (various tribes)	Various	64.78
Hindoos	Shortt	64.76
Bavarians	Novara	64.68
Ruthenians	Majer and Kopernicki	64.54
Dravidians	Shortt	64.50
Cingalese	Davy	64.48
Austrian Roumanians	Novara	64.37
Chinese	do	64.17
Italians	An. de Statist. 1879	64.00
Fuegans	Novara	63.98
Polish Jews	Majer and Kopernicki	63.88
Poles	do	63.87
Finns	Novara	63.60
Papuans	Various	63.20
Japanese	Mrs. Ayrton	63.11
Aymaras Indians (Peru)	Forbes	63.00
Peruvians	D'Orbigny	63.00
Cochin-Chinese	Finlayson	62.70
Malays	Raffles, Crawford, etc	62.34
Veddas of Ceylon	Bailey	60.42
Lapps	Horch	59.20

TABLE 30.—*Stature of adult males arranged in order of greatest stature (Roberts's Manual)*—Continued.

Race or nationality.	Authority.	Height (inches).
Andamanese	Man	58.70
Aëtas	De Quatrefages	58.30
Semangs	do	57.00
Mincopese	do	56.53
Bosjesmans (Bushmen of South Africa)	Various	52.78

Difference between tallest and shortest, 16.55 inches.
Average stature of man according to table, 65.25 inches.

TABLE 31.—*Height and weight at certain ages—Forbes.*[1]

Ages.	English.		Scotch.		Irish.		Belgian.	
	Height.	Weight.	Height.	Weight.	Height.	Weight.	Height.	Weight.
	Inches.	*Pounds.*	*Inches.*	*Pounds.*	*Inches.*	*Pounds.*	*Inches.*	*Pounds.*
18	68.1	138.0	68.55	139.0	68.7	145.5	67.2	134.0
20	68.7	144.0	69.1	146.5	69.8	148.0	67.9	143.0
21	68.7	146.0	69.2	148.5	70.0	151.0	60.8	145.5
23	68.9	149.0	69.3	151.0	70.2	154.0	68.2	148.5
24	68.9	150.0	69.3	152.0	70.2	155.0	68.2	149.5

Institutions.	Height.	Weight.
	Inches.	*Pounds.*
Virginia Military Institute	69	141.25
United States Military Institute, West Point	69	143.67
Southern California Medical College	69+	145.25
Jefferson College, Philadelphia, Pa	69+	145.00
Louisiana University	70.2	145.25
Nashville University Medical College	70.0	150.17
Michigan College	68.8	150.80

[1] Charleston Journal 13, 1858, p. 502.

TABLE 32.—*Cincinnati police standard (Dun).*

I. Age. (1) Patrolmen must be between the ages of 21 and 40 years.
(2) Lieutenants must be between the ages of 21 and 50 years.
II. Height, weight, etc. Minimum height 5 feet 7½ inches.

Height.		Weight.	Chest measure.
Ft.	*in.*	*Pounds.*	*Inches.*
5	7½	140	34
5	8	144	34½
5	9	148	35
5	10	152	35½
5	11	156	36
6	..	160	37

Metropolitan police force of New York City.

I. Applicants must be between the ages of 21 and 30 years.
II. Height, weight, etc. Minimum height, 5 feet 7½ inches.

Height.		Weight.	Chest measure.
Ft.	*in.*	*Pounds.*	*Inches.*
5	7½	138	33½
5	8	140	34
5	9	145	34½
5	10	150	35
5	11	155	35½
6	..	160	36
6	1	165	36½
6	2	170	37
6	3	175	37½
6	4	180	38

United States Army standard.

I. Must be between the ages of 21 and 36 years.
II. Weight, height, etc.

Height.	Weight (Dr. Greenleaf, United States Army).	Weight (Adjutant General's).	Chest measure.
Ft. in.	*Pounds.*		
5 4	128	120 pounds........	No stated measures are required.
5 5	130	Range between the figures in this column.	
5 6	132		
5 7	134		
5 8	141		
5 9	148		
5 10	155		
5 11	162		There must be 2 inches chest expansion.
6 0	169		
6 1	176		
6 2	184	190 pounds........	

English Army standard.

Height.	Weight.	Chest measure.
Ft. in.	*Pounds.*	*Inches.*
5 6	133–140	38–39
5 7	140–147	39–40
5 8	147–155	40–41
5 9	155–164	41–42
5 10	164–174	42–43
5 11	174–185	43–44
6 0	185–196	44–45

Hutchinson's table of healthy weight.

From the average of 2,648 well-formed, healthy persons.

Height.	Weight.
Ft. in.	*Pounds.*
5 7	148
5 8	155
5 9	162
5 10	169
5 11	174
6 0	178

(D) COMPARATIVE TABLES OF HEIGHT AND WEIGHT.

The table following gives in comparative form the average heights and weights, arranged according to age and chronological order, of the most important investigations so far made within this field. For full titles of investigations here mentioned, see the bibliography which follows.

TABLE 33.—*Height and increments, in inches, according to various measurements.*

Ages, in years.	1		2		3		4		5		6		7		8		9		10	
	Quetelet, 1836, Belgium (10 of each age and sex).[1]		Zeising, 1854, Belgium.		Cowell, 1860, Manchester, England.		Boyd, 1861, London.		Bowditch, 1875, Boston (13,695 M., 10,904 F.).[2]		Medical statistics of provost marshal general, 1875 (190,621 American-born whites fit for Army).[3]		Bowditch, 1878, foreign.[4]		Roberts, 1878, England, artisan class (13,931).[5]		Roberts, 1878, England, favored classes (7,709).		Roberts, 1878, English towns (2,613).	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0	19.7	19.4					12.20	17.50												
	7.8	7.8																		
1	27.5	27.2					1 to 2 years.													
	3.6	3.5																		
2	31.1	30.7					28.50	27.70												
	2.9	2.9																		
3	34.0	33.6					3 to 4 years.													
	2.5	2.4																		
4	36.5	36.0					31.60	31.60							38.45					
	2.4	2.3													2.71					
5	38.9	38.3					5 to 6 years.		41.57	41.19					41.16					
	2.3	2.3							2.18	2.16					2.02					
6	41.2	40.6					37.50	37.00	43.75	43.35					43.18					
	2.3	2.2							1.99	2.17					1.83					
7	43.5	42.8							45.74	45.52					45.01				46.16	
	2.2	2.2							2.02	2.06					1.98				1.15	
8	45.7	45.0	49.34						47.76	47.58					46.99				47.31	
	2.3	2.1	.24						1.93	1.79					2.23				2.87	
9	48.0	47.1	49.58				7 to 13 years.		49.69	49.37			52.00		49.22				50.18	
	2.1	2.1	1.76						1.99	1.97			1.51		1.30				2.55	
10	50.1	49.2	51.34		50.5	49.5	47.00	45.00	51.68	51.34			53.51		50.52		53.40		52.73	
	2.1	2.0	.74		.8	2.2			1.65	2.08			1.45		1.00		1.51		1.11	
11	52.2	51.2	52.08		51.3	*51.7*			53.33	*53.42*			54.96		51.52		54.91		53.84	
	1.9	2.0	1.46		1.9	1.9			1.78	2.46			1.82		1.47		2.06		1.67	
12	54.1	53.2	53.54		53.2	*53.6*			55.11	*55.88*			56.78		52.99		56.97		55.51	
	1.9	1.9	1.58		1.6	2.0			2.10	2.3			2.82		2.94		1.82		2.79	
13	56.0	55.1	55.12		54.8	*55.6*			57.21	*58.20*			59.60		55.93		58.79		58.30	
	1.8	1.8	1.18		1.9	2.3			2.66	1.7			1.90		1.83		2.32		1.54	
14	57.8	56.9	56.30		56.7	*57.9*			59.88	59.94			61.50		57.76		61.11		59.84	
	1.8	1.7			2.4	.8			2.48	1.2			2.70		2.82		2.36		2.76	
15	59.6	58.6			59.1	58.7	14 to 19 years.		62.36	61.10			64.20		60.58		63.47		62.60	
	1.6	1.3			3.1	.8			2.64	.5			1.63		2.35		2.93		2.50	
16	61.2	59.9			62.2	59.5	60.50	57.70	65.00	61.58	64.11		65.83		62.93		66.40		65.10	
	1.6	1.0			1.6	1.2			1.16	.3	1.54		1.61		1.52		1.46		1.64	
17	62.8	60.9			63.8	60.7			66.16	61.92	65.65		67.44		64.45		67.86		66.74	

18	1.4 64.2	.6 61.5							.50 66.66	.0 61.95	.74 66.39		.0 67.44		1.02 65.47		.43 68.29		1.26 68.00	
19	1.0 65.2	.3 61.8									3.68 67.07				.55 66.02		.43 68.72		1.16 69.16	
20	.5 65.7	.2 62.0									.44 67.51				.29 66.31		.41 69.13			
21											.27 67.78						.03 69.16			
22											.14 67.92				66.60		.77 69.93			
23							20 to 29 years.				.09 68.01						—.41 68.52			
24							66.75	62.00			.01 68.02						.43 68.95			
25	66.2										.03 68.05									
26											.04 68.09				66.68					
27											.02 68.11									
28											.02 68.13						69.06			
29											.04 68.17									
30	66.4										.01 68.18									
31											.02 68.20									
32											.00 68.20									
33							30 to 39 years.				.09 68.29									
34							66.50	62.00			.06 68.35									
35											.12 68.47									
36											—.19 68.28								67.93	
37											—.02 68.26									
38											.02 68.24									
39											—.01 68.23									
40	66.4						(6)				.00 68.23									

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[1] See Quetelet (in bibliography), fourth reference.

[2] See Bowditch, first reference.

[3] See Sternberg.

[4] See Bowditch, second reference.

[5] See Roberts, first reference.

[6] According to Boyd's measurements, in 1861, London, the heights were, for ages 40 to 50 years, males 66.80, females 62; 50 to 60 years, males 66, females 62; 60 to 70 years, males 65.70, females 61.50; 70 to 80 years, males 65.70, females 61; 80 to 90 years, males 66.70, females 60.

TABLE 33.—*Height and increments, in inches, according to various measurements*—Continued.

Ages, in years.	11		12		13		14		15		16		17		18		19		20		21		22	
	Roberts, 1878, English soldiers, policemen, etc. (29,525).		Roberts, 1878, English feeble-minded (829).		Roberts, 1878, England, all classes (30,000+).		Roberts, 1878, English Friends' School (4,661).		Kotelman, 1879, Hamburg (515).		Anthrop. Com., 1880, England, schools, military and naval colleges (29,405).[1]		Peckham, 1881, Milwaukee (U. S.) schools (4,773 M., 4,891 F.).		Hertle, 1882, Denmark (17,134 M., 11,250 F.).[2]		Peckham, 1882, American.[3]		Peckham, 1882, American (1 M., 1 F.).		Peckham, 1882, American (1 M., 1 F.).		Peckham, 1882, American (1).	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0					19.52	19.31																		
					7.48	5.52																		
1					27.00	24.83																		
					.20	4.83																		
2					33.70	32.33														29.1				
					3.12	3.72																		
3					36.82	36.05																		
					1.64	2.09																		
4			38.00		38.46	38.14					36.8	36.2	39.98	39.65						38.3		40.0		
			2.03		2.57	1.68					1.7	2.1	2.30	2.07						2.6		1.5		
5	41.25		40.03		41.03	40.82					38.5	38.3	42.28	41.72						40.9		41.5		
	1.72		2.20		2.97	1.81					2.5	2.3	1.80	2.06						1.6		2.9		
6	42.97		42.23		44.00	42.63					41.0	40.6	44.08	43.78	44.1	44.1			46.3	42.5		44.4		
	2.25		1.89		1.97	1.82					3.0	2.3	2.01	2.15	1.2	1.2			1.7	1.8		2.0		
7	45.22		44.12		45.97	44.45					44.0	42.9	46.09	45.93	45.3	45.3			48.0	44.3		46.4		
	1.76		1.62		1.08	2.15					2.0	1.6	1.96	1.66	1.9	1.9			2.0	2.2		1.9		
8	46.98		45.74		47.05	46.60					46.0	44.5	48.05	47.59	47.2	47.2			50.0	46.5		48.3		47.7
	1.96		1.75		2.65	2.13					1.1	1.1	1.95	2.22	2.0	2.0			1.8	1.7		1.7		1.6
9	48.94		47.49		49.70	48.73	51.5		50.6		47.1	46.6	50.00	49.81	49.2	49.2			51.8	48.2		50.0		49.3
	1.37		1.62		2.14	3.12	1.8		.9		2.6	2.1	1.85	2.08	2.0	2.0			1.7	1.7		2.0		1.9
10	50.31		49.11		51.84	*51.85*	53.3		51.5		49.7	48.7	51.85	*51.89*	51.2	51.2			53.5	49.9		52.0		51.2
	.89		1.86		1.66	1.25	3.1		1.7		2.1	2.4	1.91	1.91	1.9	1.2			1.2	2.5		1.2		2.1
11	51.20		50.97		53.50	53.10	56.4		53.2		51.8	51.1	53.76	*53.8*	53.1	52.4			54.7	52.4		53.2		53.3
	1.30		1.49		1.49	2.46	1.3		1.9		1.7	2.0	1.24	2.7	1.2	1.9			1.4	1.5		1.9		2.7
12	52.52		52.46		54.99	*55.56*	57.7		55.1		53.5	53.1	55.0	*56.5*	54.3	54.3		55.9	56.1	53.9		55.1		56.0
	2.13		2.29		1.92	2.21	2.2		1.2		1.5	3.6	2.5	2.2	2.0	3.2		.6	1.9	2.3		1.0		2.5
13	54.65		54.75		56.91	*57.77*	59.9		56.3		55.0	*56.7*	57.5	*58.7*	56.3	*57.5*		56.5	58.0	56.2		56.1		58.5
	1.43		1.78		2.42	2.03	2.2		2.3		1.9	1.1	2.4	1.8	2.4	1.9		2.6	1.3	2.2		2.4		1.9
14	56.08		56.53		59.33	*59.80*	62.1		58.6		56.9	*57.8*	59.9	*60.5*	58.7	*59.4*		59.1	59.3	58.4	57.9	*58.5*		60.4
	3.02		2.73		2.91	1.13	2.1		2.1		2.4	2.0	2.4	1.1	2.7	1.2		2.5	3.2	2.6	1.5	2.2		.8
15	59.10		59.26		62.24	60.93	64.2		60.7		59.3	*59.8*	62.3	61.6	61.4	60.6		61.6	62.5	61.0	59.4	*60.7*		61.2
	4.80		1.43		2.07	.82	1.9		3.0		2.9	1.1	2.8	.6	3.2	2.0		1.9	3.6	.9	3.1	1.3		.1
16	63.90		60.69		64.31	61.75	66.1		63.7		62.2	60.9	65.1	62.2	64.6	62.6		63.5	66.1	*61.9*	62.5	62.0		61.3

17	2.01		1.98		1.93	.77	1.1		2.0		2.1	.8	1.5	.7	1.1			.3	2.8	.7	3.2	.5		
	65.91		62.67		66.24	62.52	67.2		65.7		64.3	61.7	66.6	62.9	65.7			63.8	68.9	62.6	65.7	62.5		61.3
18	.87		.54		.72	−.08			.6		1.9	.8		−.4	1.2				1.0	.4	1.1	1.0		.2
	66.78		63.21		66.96	62.44			66.3		66.2	62.5		62.5	66.9			63.8	69.9	63.0	66.8	63.5		61.5
19	.41		−.02		.33	.31			−.6		.8	−.1			0.0				1.0	.5				
	67.19		63.19		67.29	62.75			65.7		67.0	62.4			66.9			63.8	70.9	63.5	66.8	63.5		
20	.07		.99		.23	.23			.1		.3	.4												
	67.26		64.18		67.52	62.98			65.8		67.3	62.8												
21	.27		.07		.11	.05					.2	.2												
	67.53		64.25		67.63	63.03					67.5	63.0												
22	.09		.25		.05	−.16					.1	.0												
	67.62		64.50		67.68	62.87					67.6	63.0												
23					−.20	.14																		
					67.48	63.01																		
24					.24	−.31																		
					67.72	62.70																		
25					.03																			
					67.75																			
26					.03																			
					67.78																			
27					.14																			
	67.93				67.92																			
28					−.22																			
					67.70																			
29					.17																			
					67.87																			
34					67.89																			
36	67.22		64.87																					
39					68.09																			
45					67.96																			
47					67.92																			
49					67.41																			
51					69.22																			

[1] See Galton, seventh reference.

[2] See Hertel, third reference.

[3] See Peckham, first reference.

TABLE 33.—*Height and increments, in inches, according to various measurements*—Continued.

Age, in years.	23		24		25		26		27		28		29		30		31		32	
	Peckham, 1882, American (1).		Peckham, 1882, Beloit College (533).		Peckham, 1882, American children (216).		Thoma, 1882, Germany, volksschüler.[1]		British report, 1883, English (first 4 years from Holt).		Shuttleworth, 1884, England.				Daffner, 1884, Germany (426 M., 344 F.).[2]		Daffner, 1884, Germany.		Daffner, 1885, Germany (700).	
											General population.		Idiots and imbeciles (209).							
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0									20.6	20.5					20.44	20.44				
									8.4	8.2					8.60	9.90				
1									29.0	28.7					29.04	30.34				
									3.5	3.8					4.49	2.47				
2					29.53	29.67			32.5	32.5					33.53	32.81				
					4.29	3.27			2.5	2.5					2.58	2.55				
3					33.82	32.94			35.0	35.0					36.11	35.36				
					3.24	3.37			3.0	3.0					1.87	2.35				
4		32.7			37.06	36.31			38.0	38.0	41.0	40.55	40.00	39.50	37.98	37.71				
		2.9							3.0	1.5	2.0	2.25	2.25	1.75	2.49	1.74				
5		35.6							41.0	40.5	43.0	42.80	42.25	41.25	40.47	39.45				
		2.5							3.0	2.3	2.0	1.65	1.75	2.00	1.19	1.41				
6		38.1							44.0	42.8	45.0	44.45	44.00	43.25	41.66	40.86				
		1.6							2.0	1.7	2.0	2.15	1.75	2.00						
7		39.7							46.0	44.5	47.0	46.60	45.75	45.25						
		2.6							1.0	2.1	2.0	2.13	1.75	2.25						
8		42.3					47.95		47.0	46.6	49.0	48.73	47.50	47.50						
		1.9					1.10		2.7	2.1	2.0	2.32	1.50	1.50						
9		44.2					49.05		49.7	48.7	51.0	51.05	49.00	49.00						
		1.8					1.70		2.1	2.3	2.0	2.05	2.00	2.00						
10		46.0					50.75		51.8	51.0	53.0	*53.10*	51.00	51.00						
		2.0					2.05		1.7	2.1	2.0	2.56	1.50	2.00						
11		48.0					52.80		53.5	53.1	55.0	*55.66*	52.50	*53.00*						
		1.3					1.88		1.5	2.5	2.5	2.11	2.25	2.00						
12		49.3					54.68		55.0	*55.6*	57.5	*57.77*	54.75	*55.00*						
		2.4					1.74		2.0	2.1	2.5	2.03	1.75	1.50						
13		51.7					56.42		57.0	*57.7*	60.0	59.80	56.50	56.50					58.14	
		1.0					6.46		2.3	2.1	2.0	1.13	2.75	1.50					.48	
14		52.7					*62.88*		59.3	*59.8*	62.0	60.93	59.25	58.00					58.62	
		2.0							2.9	1.1	2.0	.82	1.50	1.00					5.64	
15		54.7	63.34						62.2	60.9	64.0	61.75	60.75	59.00					64.26	
		2.4	1.79						2.1	0.8	1.5	.77	1.75	1.25					—.29	
16		57.1	65.13						64.3	61.7	65.5	62.52	62.50	59.25			64.0	59.1	63.97	
		2.8	.91						1.9	.8	1.0	.92	.75				.6	.7	2.03	
17		59.9	66.04						66.2	62.5	66.5	62.44	63.25				64.6	59.8	66.00	

18	....	....	1.84	....	....	....	....	....	.7	−.1	.5	.31	.00	....	....	....	1.1	.8	1.46	....
	....	....	67.88	....	....	....	....	....	66.9	62.4	67.0	62.75	63.25	....	....	....	65.7	60.6	67.46	....
19	....	....	.23	....	....	....	....	....	.4	.3	.25	.23	.75	....	....	....	.8	.8	.36	....
	....	....	68.11	....	....	....	....	....	67.3	62.7	67.25	62.98	64.00	59.50	....	....	66.5	61.4	67.82	....
20	....	....	.43	....	....	....	....	....	.2	.2	.25	.05	.25	....	....	....	.6	.6	.55	....
	....	....	68.54	....	....	....	....	....	67.5	62.9	67.5	63.03	64.25	....	....	....	67.1	62.0	68.37	....
21	....	....	.23	....	....	....	....	....	.1	.1	....	−.16	.25	....	....	....	.6	.6	−2.35	....
	....	....	68.77	....	....	....	....	....	67.6	63.0	....	62.87	64.50	....	....	....	67.7	62.6	66.02	....
22	....	....	−.10	....	....	....	....	....	....	....	....	.14	....	....	....	....	.6	.6	3.25	....
	....	....	68.67	....	....	....	....	....	....	....	....	63.01	....	....	....	....	68.3	63.2	69.27	....
23	....	....	.29	....	....	....	....	....	....	....	....	−.31	....	....	....	....	.8	.6	....	....
	....	....	68.96	....	....	....	....	....	....	....	....	62.70	....	....	....	....	69.1	63.8	....	....
24	....	....	.34	....	....	....	....	....	....	....	....	....	....	....	....	....	.0	.8	....	....
	....	....	69.30	....	....	....	....	....	....	....	....	....	....	....	....	....	69.1	64.6	....	....
25	....	....	.41	....	....	....	....	....	....	....	....	....	....	....	....	....	1.8	1.0	....	....
	....	....	69.71	....	....	....	....	....	....	....	....	....	....	....	....	....	70.9	65.6	....	....
26	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.8	.7	....	....
	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	71.7	66.3	....	....
27	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
28	....	....	....	....	....	....	....	....	....	....	67.75	62.02	64.75	59.75	....	....	....	....	....	....

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[1] One-half year should be added to the ages given for the measurements in this column.

[2] See Daffner, first reference.

TABLE 33.—*Height and increments, in inches, according to various measurements*—Continued.

Age, in years.	33		34		35		36		37		38		39		40		41		42		43	
	Greenwood, 1886, American, white (724).		Greenwood, 1886, American, negro (223).		Michailoff, 1887, Russia, Dorfschüler.[1]		Michailoff, 1887, Russia, Elementarschöl.[1]		Michailoff, 1887, Russia, Stadtschüler.[1]		Cordeiro, 1887, M. D. in United States Navy (5,401).		Suligowski, 1887, Radom (1,133).		Landsberger, 1888, Posen (104).[2]		Erismann, 1888, Moscow, (3,212 M., 1,495 F.).[3]		Erismann, 1888, Russia.		Stevenson, 1887, English-speaking people from England and America.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
5																					41.30	41.05
																					2.58	1.94
6															42.1						43.88	42.99
															2.1						1.98	1.99
7															44.2		44.1	43.9			45.86	44.98
															2.00		2.3	1.9			1.55	2.11
8					46.34	46.3	47.42		46.38	45.80					46.2		46.4	45.8			47.41	47.09
					1.30	1.54	1.46		1.96	1.28					1.9		1.9	1.3			2.28	1.96
9					47.64	*47.84*	48.88		48.34	47.08			49.6		48.1		48.3	47.1	47.29		49.69	49.05
					2.20	1.38	1.74		3.16	2.12			1.5		1.3		3.2	2.1	.90		2.07	2.14
10					49.84	49.22	50.62		51.50	49.20			51.1		49.4		51.5	49.2	48.19		51.76	51.19
					1.16	1.36	1.30		1.88	1.84			1.6		1.8		1.9	1.9	1.53		1.71	2.07
11	52.3	51.5	50.2	51.6	51.00	50.58	51.92		53.38	51.04			52.7		51.2		53.4	51.1	49.72		53.47	53.26
	1.0	1.7	.4	1.9	1.70	1.80	1.46		1.78	1.26			1.4		2.0		1.8	1.2	1.42		1.58	2.51
12	53.3	53.2	50.6	53.5	52.70	52.38	53.38		55.16	52.30			54.1		53.2		55.2	52.3	51.14		55.05	*55.77*
	2.1	2.2	3.4	2.0	1.58	1.86	1.92		2.08	2.12			2.4		1.9		2.0	2.2	1.77		2.01	2.19
13	55.4	55.4	54.0	*55.5*	54.28	54.24	55.30		57.24	54.42	59.00		56.5		55.1		57.2	54.5	52.91		57.06	*57.96*
	1.9	1.8	1.7	1.5	1.18		1.96		1.88	2.96	2.10		2.2				1.9	2.9	1.31		2.54	1.91
14	57.3	*57.2*	55.7	*57.0*	55.46		57.26		59.12	57.38	61.10		58.7				59.1	57.4	54.22		59.60	*59.87*
	2.2	2.0	2.1	2.1	1.42				2.46	.24	2.36		2.8				2.5		1.37		2.67	1.14
15	58.5	*59.2*	57.8	*59.1*	56.88				61.58	57.62	63.46		61.5				61.6		55.59		62.27	61.01
	4.3	2.6	4.3	1.5					1.96	1.53	1.48		2.0				1.9		2.16		2.39	.66
16	62.8	61.8	62.1	60.6					63.54	59.15	64.94		63.5				63.5		57.75		64.66	61.67
									1.00				1.7				1.1		2.57		1.54	.55
17									64.54				65.2				64.6		60.32		66.20	62.22
													.3						2.12		.61	—.03
18													65.5						62.44		66.81	62.19
													—.2						1.26			
19													65.3						63.70			
													1.1						.71			
20													66.4						64.41			
													—.7						.31			
21													65.7						64.72			

Ages, in years.	44		45		46		47		48		49		50		51		52		53		54	
	Carstädt, 1888, Breslau (600).		Karlstädt, 1888, Germany (Höhere Schule).[1]		Geissler, 1888, Gohlis (1,386 M., 1,420 F.).		Key, 1889, Sweden (15,000 M., 3,000 F.).[4]		Simon, 1889, French (223).		Pagliani, 1890, Turin (1,098 M., 968 F.).		Stevenson, 1888-1890, England, nonlaboring.		Stevenson, 1888-1890, England, laboring.		Wiener, 1890, German (1).		Wiener, 1890, German (1).		Wiener, 1890, German (1).	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0																	21.16		18.11		20.63	
																	7.07		9.76		8.58	
1																	28.23		27.87		29.21	
																	5.08		5.12		4.81	
2																	33.31		32.99		34.02	
																	3.34		3.34		3.07	
3											33.9	33.3					36.65		36.33		37.09	
											2.3	2.7					2.76		3.23		3.02	
4											36.2	36.0					39.41		39.56		40.11	
											2.0	2.0					2.48		2.96		2.41	
5											38.2	38.0					41.89		42.52		42.52	
											2.5	2.2					2.88		2.37		2.56	
6	43.0				43.4	43.0	45.6	44.5			40.7	40.2					44.77		44.89		45.08	
	1.8				1.6	1.8	2.0	1.2			3.6	2.8					2.39		2.20		2.32	
7	44.8				45.0	44.8	47.6	45.7			44.3	43.0					47.16		47.09		47.40	
	2.0				2.0	1.5	2.0	2.7			2.3	2.5					2.13		2.12		2.09	
8	46.8		47.88		47.0	46.3	49.6	48.4	43.58		46.6	45.5					49.29		49.21		49.49	
	1.9		1.73		1.8	2.5	2.0	1.6	1.94		2.2	2.1					2.08		2.08		2.12	
9	48.7		49.61		48.8	48.8	51.6	50.0	45.52		48.8	47.6					51.37		51.29		51.61	
	1.9		1.88		2.0	1.8	.8	2.0			1.0	2.5					1.70		1.78		2.21	
10	50.6		51.49		50.8	50.6	52.4	52.0			49.8	*50.1*	53.0		50.5		53.07		53.07		53.82	
	1.9		1.90		1.3	2.1	1.1	1.9			1.1	1.6	1.5		1.0		2.32		2.28		2.17	
11	52.5		53.39		52.1	*52.7*	53.5	*53.9*	49.33		50.9	*51.7*	54.5		51.5		55.39		55.35		55.99	
	1.9		1.84		2.3	2.2	1.6	2.4	2.69		1.7	2.1	2.0		2.0		2.17		2.24		1.18	
12	54.4		55.23		54.4	*54.9*	55.1	*56.3*	52.02		52.6	*53.8*	56.5		53.5		57.56		57.59		57.17	
	2.0		2.17		1.0	2.2	1.6	2.0	.76		2.4	2.3	2.0		2.0		3.34		3.23		2.63	
13	56.4		57.40		55.4	*57.1*	56.7	*58.3*	52.78		55.0	*56.1*	58.5		55.5		60.90		60.82		59.80	
	2.3		2.56				2.0	1.9	2.93		2.2	2.8	2.5		2.5		3.75		2.73		2.05	
14	58.7		59.96				58.7	*60.2*	55.71		57.2	*58.9*	61.0		58.0		64.65		63.55		61.85	
	3.0						2.7	1.6	2.04		2.6	1.2	2.5		2.5		1.89		3.03		3.70	
15	61.7						61.4	*61.8*	57.75		59.8	*60.1*	63.5		60.5		66.54		66.58		65.55	
	2.4						2.4	.8	2.37		2.4	.5	3.0		2.5		.94		1.65		2.25	
16	64.1						63.8	62.6	60.12		62.2	60.6	66.5		63.0		67.48		68.23		67.80	
							1.9	.4	1.18		.8	.4	1.5		1.5		.51		.71		1.38	
17							65.7	63.0	61.30		63.0	61.0	68.0		64.5		67.99		68.94		69.18	

[1] One-half year should be added to the ages given for the measurements in this column.

[2] See Landsberger, first reference.

[3] See Erismann, first reference.

[4] See Key, first reference.

TABLE 33.—*Height and increments, in inches, according to various measurements*—Continued.

	44		45		46		47		48		49		50		51		52		53		54	
Ages, in years.	Carstädt, 1888, Breslau (600).		Karlstädt, 1888, Germany (Höhere Schule).		Geissler, 1888, Gohlis (1,386 M., 1,420 F.).		Key, 1889, Sweden (15,000 M., 3,000 F.).[1]		Simon, 1889, French (223).		Pagliani, 1890, Turin (1,098 M., 968 F.).		Stevenson, 1888–1890, England, nonlaboring.		Stevenson, 1888–1890, England, laboring.		Wiener, 1890, German (1).		Wiener, 1890, German (1).		Wiener, 1890, German (1).	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
							1.2	0.0			0.3	0.0	0.5		1.0		0.04		0.46		0.34	
18							66.9	63.0			63.3	61.0	68.5		65.5		68.03		69.40		69.52	
							.4	.8			.4		.2		.5		.04		.08		.36	
19							67.3	63.8			63.7		68.7		66.0		68.07		69.48		69.88	
							.4	—.8					.3		.2				.04		.11	
20							67.7	63.0	62.64				69.0		66.2		68.07		69.52		69.99	
													.0		.3							
21													69.0		66.5							
23									62.95													
																	.12		.04		.17	
25																	68.19		69.56		70.16	
30													69.0		66.5							

	55		56		57		58		59		60		61		62		63		64		65	
Age, in years.	Wiener, 1890, German (1).		Greenwood, 1890, foreign (385).		Greenwood, 1890, American white (2,619).		Greenwood, 1890, American negro (574).		Hasse, 1891, Germany, I Bürgerschule.[2]		Hasse, 1891, Germany, II Bürgerschule.[2]		Geissler, 1892, Freiburg (10,343 M., 10,830 F,).[3]		Barnes, 1892, Oakland, Cal. (4,956).		Schmidt, 1892, Saalfeld (4,699 M., 4,807 F.).		Porter, 1893, St. Louis, (16,295 M., 18,059 F.).[4]		Hanna, 1893, Oberlin College (500 F. students).	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0	21.65																					
	7.48																					
1	29.13																					
	4.69																					
2	33.82																					
	3.70																					
3	37.52																					

4	3.51																					
	41.03																					
5	2.75																					
	43.78																					
6	2.16																					
	45.94												42.8	42.5	44.1	*44.4*	43.0	42.7	42.9	42.4		
7	2.88												1.5	1.6	.9	.5	2.0	2.2	2.0	2.1		
	48.82												44.3	44.1	45.0	44.9	45.0	44.9	44.9	44.5		
8	2.51												2.0	1.8	2.6	1.9	2.2	1.7	2.0	2.1		
	51.33								47.44	47.44	46.70	45.80	46.3	45.9	47.6	46.8	47.2	46.6	46.9	46.6		
9	2.33								2.17	2.17	1.68	2.70	1.8	1.9	1.7	2.4	2.0	2.2	2.1	2.1		
	53.66								49.61	49.61	48.38	48.50	48.1	47.8	49.3	49.2	49.2	48.8	49.0	48.7		
10	2.01								1.92	1.64	2.00	1.92	1.5	1.8	2.6	2.3	1.3	2.1	1.7	1.9		
	55.67								51.53	51.25	50.38	50.42	49.6	49.6	51.9	51.5	50.5	*50.9*	50.7	50.6		
11	1.81								1.31	1.94	1.46	2.08	1.8	2.0	1.6	2.4	1.8	1.7	2.0	1.8		
	57.48			50.50	52.00	51.68	51.00	49.80	52.84	*53.19*	51.84	*52.50*	51.4	51.6	53.5	*53.9*	52.3	*52.6*	52.7	52.4		
12	2.72			2.30	1.00	1.02	2.36	3.00	1.96	2.71	2.40	1.96	1.9	1.7	1.6	2.7	2.0	2.0	1.7	2.4		
	60.20		53.98	52.80	53.00	52.70	53.36	52.80	54.80	*55.90*	54.24	*54.46*	53.3	53.3	55.1	*56.6*	54.3	*54.6*	54.4	*54.8*		
13	3.89		.79	3.76	3.00	1.32	.37	1.20	.79	2.05	1.06	2.34	1.9	2.4	1.7	3.4	1.7	2.2	1.9	2.9		
	64.09		54.77	*56.56*	56.00	54.02	53.73	*54.00*	55.59	*57.95*	55.30	*56.80*	55.2	*55.7*	56.8	*60.0*	56.0	*56.8*	56.3	*57.7*		
14	2.14		3.83	3.67	3.60	3.41	2.27	2.85	2.79	1.34	1.51	1.32			2.9	1.2			2.0	1.6		
	66.23		58.60	*60.23*	56.60	*57.43*	56.00	*56.85*	58.38	*59.29*	56.81	*58.12*			59.7	*61.2*			58.3	*59.3*		59.25
15	2.67		.45	1.88	2.00	2.88	2.88	1.90							2.1	.7			2.7	1.7		58.48
	68.90		59.05	*62.11*	58.60	*60.31*	58.88	58.75							61.8	*61.9*			61.0	61.0		
16	1.29		3.36	3.47	3.80	2.19	2.12	2.79							2.7	.8			2.1	1.0		59.76
	70.19		62.41	*65.58*	62.40	*62.50*	61.00	*61.54*							64.5	62.7			63.1	62.0		62.94
17	.59				1.50	.40	3.44	1.26							2.6	.0			1.9	.7		62.35
	70.78				63.90	62.90	64.44	62.80							67.1	62.7			65.0	62.7		61.34
18	.20				.90	.39	.56	3.2							.5	.5				.1		61.61
	70.98				64.80	63.29	65.00	66.00							67.6	63.2				62.8		62.01
19	.16				1.86	.91														—.4		62.56
	71.14				66.66	64.20														62.4		63.11
20	.08																					63.35
	71.22																					63.90
21																						65.17
																						64.53
22																						64.88
23																						65.24
																						65.71
27																						66.34
28																						67.09
31																						68.11

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[1] See Key, first reference.

[2] One-half year should be added to the ages given for the measurements in this column.

[3] See Geissler, second reference.

[4] See Porter, second reference.

TABLE 33.—*Height and increments, in inches, according to various measurements*—Continued.

Ages in years.	66		67		68		69		70		71		72		73		74		75		76		77	
	Hastings, 1893, American, Amherst College (1,321).[1]		Hastings, 1893, American, Amherst College (2,106).		Sack, 1893,[2] Russia, gymnasium.[3]		Hanna, 1893, Oberlin College (1,600 students).		Kosmowsky, 1894, Russia, farien koloniel.[5]		Report of Surgeon General, U. S. Army, recruits accepted in 1894.						Porter, 1894, St. Louis (15,525 M., 16,527 F.).[5]		West, 1894, Worcester (3,250).[6]		Gilbert, 1894, New Haven (602 M., 584 F.).		Beyer, 1895, American naval cadets (4,537).[7]	
											Native white (4,547).[4]		Foreign-born white (2,388).		Negro (499).									
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
5																			43.2	42.3				
																			1.2	1.5				
6																	42.89	42.19	44.4	43.8	45.0	44.9		
																	2.00	2.28	1.7	2.5	2.1	2.0		
7																	44.89	44.47	46.1	*46.3*	47.1	46.9		
																	2.01	2.13	2.1	1.6	1.8	1.5		
8					49.13				46.19	45.88							46.90	46.60	48.2	47.9	48.9	48.4		
					2.16				1.65	1.42							2.06	2.09	1.8	1.9	2.3	2.4		
9					51.29				47.84	47.30							48.96	48.69	50.0	49.8	51.2	50.8		
					1.39				2.04	1.96							1.77	1.87	2.8	2.5	1.8	2.0		
10					52.68				49.88	49.26							50.73	50.56	52.8	52.3	53.0	52.8		
					1.65				1.62	1.96							1.97	1.88	1.8	1.6	2.9	1.8		
11					54.33				51.50	51.22							52.70	52.44	54.6	53.9	55.9	54.6		
					1.77				1.96	1.97							1.71	2.33	1.7	3.1	1.1	3.3		
12					56.10				53.46	53.19							54.41	*54.77*	56.3	*57.0*	57.0	*57.9*		
					2.08				1.04	1.27							1.85	2.92	1.8	1.2	1.8	2.5		
13					58.18				54.50	54.46							56.26	*57.69*	58.1	*58.2*	58.8	*60.4*		
					3.08				4.54	2.23							2.24	1.69	2.6	2.3	.5	1.0		
14					61.26			58.2	59.04	56.69							58.50	*59.38*	60.7	60.5	59.3	*61.4*		
					2.29												2.48	1.66	3.2	1.3	3.5	1.1		
15					63.55												60.98	*61.04*	63.9	61.8	62.8	62.5	63.80	
					1.69												2.12	.98	1.4	.6	2.9	.0	2.13	
16					65.24			59.0			64.58						63.10	62.02	65.3	62.4	65.7	62.5	65.93	
					.95			59.8			1.86						1.91	.71	1.0	.4	1.4	1.1	1.12	
17	66.16		66.60		66.19			60.2			66.44						65.01	62.73	66.3	62.8	67.1	63.6	67.05	
	.43		.36		.51			60.7			1.01						2.08	.03	.6	—.2			.24	
18	66.59		66.96		66.70			61.4			67.45		66.65		66.10		67.09	62.76	66.9	62.6			67.29	
	—.52		.34		.31			61.7			—.04		.88		.57			—.38	.5	.1			.61	
19	66.07		67.30		67.01			62.4			67.41		67.53		66.67			62.38	67.4	62.7			67.90	
	1.73		.65		—.19			62.6			.69		—.87		1.02			.37	1.1	—.1			.60	
20	67.80		67.95		66.82			63.1			68.10		66.66		67.69			62.75	68.5	62.6			68.50	
	—.08		.06					63.5			—.89		.49		—.45			.23	—1.4	.1			.10	
21	67.72		68.01								67.21		67.15		67.24			62.98	67.1	62.7			68.60	

22	.43		.10					64.1			.47		.11		—.08								—.15	
	68.15		68.11					64.5			67.68		67.26		67.16								68.45	
23	.11		.20								.06		—.23		.21								.17	
	68.26		68.31					64.9			67.74		67.03		67.37								68.62	
24	.42		.13								—.18		.50		—.19									
	68.68		68.44					65.5			67.56		67.53		67.18									
25	.15		.24								—.01		—.61		.28									
	68.83		68.68								67.55		66.92		67.46									
26	—.39		.14								.10		.51		—.04									
	68.44		68.82					66.3			67.65		67.43		67.42									
27	—.12		—.52								—.20		—.39		.03									
	68.32		68.30					67.0			67.45		67.04		67.45									
28	.34		.22								.09		.37		—.34									
	68.66		68.52								67.54		67.41		67.11									
29	—.58		—.43								.24		—.11		.42									
	68.08		68.09								67.78		67.30		67.53									
30	1.11		1.10								—.03		—.10		—1.32									
	69.19		69.19								67.75		67.20		66.21									
31											—.08		.01		.26									
											67.67		67.21		66.47									
32											—.11		.05		1.28									
								67.3			67.56		67.26		67.75									
33											—.35		.00		—.99									
											67.21		67.26		66.76									
34											.73		—.16		.69									
											67.94		67.10		67.45									
35											—.76		.13		.49									
											67.18		67.23		67.94									
36											.22		—.06		—.70									
											67.40		67.17		67.24									
37											.07		—.48		.34									
											67.47		66.69		67.58									
38											—.37		.34		—.58									
											67.10		67.03		67.00									
39											.91		—.03		—1.56									
											68.01		67.00		65.44									
40											—.55		.23		1.64									
											67.46		67.23		67.08									
41											—1.05		—1.00		1.11									
											66.41		66.23		68.19									

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[1] See Hastings, fourth reference.

[2] See Sack, second reference.

[3] One-half year should be added to the ages given for the measurements in this column.

[4] See Sternberg.

[5] See Porter, second reference.

[6] See West, third reference

[7] See Beyer, first reference.

TABLE 33.—*Height and increments, in inches, according to various measurements*—Continued.

Ages in years.	78		79		80		81		82		83		84		85		86		87		88		89	
	Hall, 1896, Pennsylvania (2,424).		Combe, 1896, Lausanne (2,000).		Boas, 1897, Oakland, Cal., (2,053 M., 2,377 F.).[1]		Boas, 1897, American (2,386 M., 1,967 F.).		Boas, 1897, American (45,151 M., 43,298 F.).		Gilbert,[2] 1897, Iowa (50 M., 50 F.).[3]		MacDonald, 1898, Washington (7,953 M., 8,520 F.), white.		Boas, 1898, half bloods and Indians.[4]		Hrdlicka, 1899, white.		Hrdlicka, 1899, colored.		Hrdlicka, 1899, Italian.		Smedley, 1900, Chicago (2,788 M., 3,471 F.).	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
3																			30.86	33.06				
																				2.61				
4																				35.67				
																			10.25	3.11				
5									41.69	41.29					41.26	38.36	37.84	39.52	41.10	38.78				
									2.24	2.05							3.54	2.21	2.24	4.14				
6					44.76	44.29	44.05	44.09	43.93	43.34	45.0	44.6	44.5	44.2			41.38	41.73	43.34	42.92	40.34	41.62	43.58	43.18
					1.70	1.97	1.37	2.01	2.06	2.36	*2.8*	*2.2*	1.5	.9			2.72	1.06	1.78	1.42	3.46	.92	44.59	44.30
7			46.2	45.8	46.46	46.26	46.42	46.10	45.99	45.70	47.8	46.8	46.0	45.1	42.87		44.10	42.79	45.12	44.34	43.80	42.54	45.60	45.43
			2.0	1.9	2.69	2.01	1.93	2.97	2.06	2.02	*1.8*	*2.4*	1.8	2.3	3.67		1.26	1.70	1.96	5.24	.82	1.12	46.61	46.54
8			48.2	47.7	49.15	48.27	48.35	48.07	48.05	47.72	49.6	49.2	47.8	47.4	46.54	51.08	45.36	44.49	47.08	*49.58*	44.62	43.66	47.61	47.44
			1.8	1.8	1.36	2.01	1.96	1.93	1.92	1.94	1.7	*2.1*	1.9	1.7	3.46		2.36	2.24	2.16	−.12	2.50	1.80	48.61	48.33
9	51.2		50.0	49.5	50.51	50.28	50.31	50.00	49.97	49.66	51.3	51.3	49.7	49.1	50.00		47.72	46.73	49.24	*49.46*	47.12	45.46	49.66	49.31
	2.7		1.7	2.1	2.01	2.28	2.01	2.36	1.91	2.02	2.0	*1.7*	2.0	2.1			1.41	3.15	.80	1.50	1.46	3.58	50.71	50.30
10	53.9		51.7	51.6	52.52	*52.56*	52.32	52.36	51.88	51.68	53.3	53.0	51.7	51.2			49.13	49.88	50.04	*50.96*	48.58	49.04	51.54	51.21
	1.2		1.6	2.1	1.77	2.12	1.77	1.66	1.74	2.11	1.9	*1.6*	1.5	1.9			2.64	1.45	3.50	.46	2.08	1.72	52.38	52.24
11	55.1		53.3	*53.7*	54.29	*54.68*	54.09	54.02	53.62	*53.79*	55.2	54.6	53.2	53.1	57.01		51.77	51.33	53.54	51.42	50.66	50.76	53.20	*53.29*
	1.6		1.7	2.2	1.85	2.41	2.05	2.79	1.79	2.32	1.9	*3.4*	1.9	2.7			1.86	2.10	.84	6.32	1.96	1.82	54.02	*54.45*
12	56.7		55.0	*55.9*	56.14	*57.09*	56.14	*56.81*	55.41	*56.11*	57.1	58.0	55.1	*55.8*		52.99	53.63	53.43	54.38	*57.74*	52.62	52.58	54.94	*55.64*
	4.3		1.9	2.0	2.21	2.59	2.09	2.21	2.07	2.43	1.6	*1.2*	1.7	2.1		7.17	2.27	2.91	.42	.38	1.22	1.50	55.87	*56.89*
13	61.0		56.9	*57.9*	58.35	*59.68*	58.23	*59.02*	57.48	*58.54*	58.7	59.2	56.8	*57.9*		60.16	55.90	56.34	54.80	*58.12*	53.84	*54.08*	57.30	*58.15*
	1.3				2.91	1.97	2.64	1.56	2.52	1.89	3.0	*2.5*	2.3	1.3			1.16	2.52	4.42	3.26	5.40	4.30	58.70	*59.47*
14	62.3				61.26	*61.65*	60.87	60.58	60.00	*60.43*	61.7	61.7	59.1	*59.2*	57.71		57.06	*58.86*	59.22	*61.38*	48.24	*58.38*	59.82	*60.49*
	3.0				2.99	.44	2.91	1.19	2.88	1.18	3.0	*1.6*	2.7	2.4			.51	1.58	−1.94	−.18	5.18		60.93	*61.58*
15	65.3				64.25	62.09	63.78	61.77	62.88	61.61	64.7	63.3	61.8	61.6			57.56	*60.44*	57.28	*61.20*	53.42		62.24	61.75
	1.2				1.42	.78	1.57	.12	2.04	.61	2.0	*0*	2.5	.8			6.03	−1.47	1.76				63.55	61.99
16	66.5				65.67	62.87	65.35	61.89	64.92	62.22	66.7	63.3	64.3	62.4			63.59	58.97	59.04				64.59	62.33
	.6					.00	1.01	.75	1.58	.43	1.5	*1.2*	1.7	.6			−2.41						65.62	62.68
17	67.1					62.87	66.36	62.64	66.50	62.65	68.2	64.5	66.0	63.0			61.18						66.10	62.71
	.2								.85		.4	*.1*	1.1	.1				2.21					66.56	62.74
18	67.3								67.35		68.6	64.6	67.1	63.1	65.12	62.29		61.18					67.42	62.77
	.2										.4	*0*			4.56								68.28	62.80
19	67.5										69.0	64.6			69.68									

20	.1														−.90									
	67.6														68.78	59.84								
21	.1																							
	67.7																							
22																59.21								
23																−.43								
															69.84	58.78								
25															64.96									
27															64.41	62.40								
28															−1.26	−.31								
															63.15	62.09								
29																−.95								
																61.14								
30																−.43								
															62.25	60.71								
31																−2.36								
																58.35								
33																62.91								
34															63.08									
35															.62									
															63.70	63.82								
40															66.93	58.22								
41																3.04								
																61.26								
42																−3.23								
																58.03								
43															66.26									
44															−3.97									
															62.29	56.26								
45															2.32									
															64.61									
46															−2.32									
															62.29	53.07								

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[1] See Boas, ninth reference.

[2] The ages for this school are one-half year greater than for the others.

[3] See Gilbert, first reference.

[4] See Boas, thirteenth reference.

TABLE 33.—*Height and increments, in inches, according to various measurements*—Continued.

Ages, in years.	90		91		92		93		94		95		96		97		98		99		100	
	Amherst Col., 1900, America (4,880).[1]		Hastings, 1902, America (5,476).[2]		Hastings, 1902, Nebraska (7,700 M., 7,069 F.).[3]		Rietz, 1903, Berlin, Gymnasium (1,740 M., 533 F.).		Rietz, 1903, Berlin, Gemeideschulen (1,496 M., 1,365 F.).		Ranke, 1905, Germany, (1,457 M., 1,000 F.).		Hoesch Ernst, 1906, German Volksschulen (175 M., 175 F.).[4]		Bobbitt, 1909, Philippine Islands (1,180 M., 438 F.).		Bobbitt, 1909, China (60).		Baldwin, Chicago, 1910 (400 M., 500 F.).		Misawa, 1909, Japan.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0											19.61	19.10										
											4.99	5.19										
1											24.60	24.29										
											5.70	5.42										
2											30.30	29.71										
											4.09	3.77										
3											34.39	33.48										
											2.08	2.68										
4											36.47	36.16										
											2.67	1.96										
5			41.60		41.57	41.41					39.14	38.12							46.32	43.24		
			1.95		1.92	1.78					2.48	4.03							47.64	44.88		
6			43.55		43.49	43.19	46.49	*46.77*	44.63	43.98	41.62	*42.15*			43.09				47.65	46.46		
			2.00		1.98	1.98	1.46	1.45	1.43	2.10	2.28	2.49			1.59				47.64	47.64		
7			45.55		45.47	45.17	47.95	*48.22*	46.06	*46.08*	43.90	*44.64*			44.68	*45.08*			49.21	48.83	41.92	41.46
			2.20		2.20	2.05	2.08	1.77	1.65	1.75	2.04	1.14			1.38	1.18			50.39	49.21	1.78	1.65
8			47.75		47.67	47.22	50.03	49.99	47.71	*47.83*	45.94	45.78	49.63	48.71	46.06	*46.26*			51.57	50.00	43.70	43.11
			1.80		1.79	2.36	1.53	1.49	1.35	1.30	1.81	2.28	0.00	.50	1.58	2.24			51.96	51.18	1.82	1.81
9			49.55		49.46	49.58	51.56	51.48	49.06	*49.13*	47.75	*48.06*	49.63	49.21	47.64	*48.50*	48.70		52.76	52.37	45.52	44.92
			2.00		2.00	2.02	1.77	1.85	2.37	2.20	2.24	1.97	2.02	3.40	1.45	1.62	1.50		53.94	53.45	1.72	1.73
10			51.55		51.46	51.60	53.33	53.33	51.43	51.33	49.99	*50.03*	51.65	*52.61*	49.09	*50.12*	50.20		54.72	54.34	47.24	46.65
			1.55		1.55	1.52	1.49	2.16	1.74	2.00	1.41	1.77	1.31	1.37	2.05	.40	.43		55.12	55.51	1.88	1.86
11			53.10		53.01	53.12	54.82	*55.49*	53.17	*53.33*	51.40	*51.80*	52.96	*53.98*	51.14	50.52	50.63		55.91	*56.69*	49.12	48.51
			2.15		2.12	2.70	2.32	2.60	1.66	2.00	1.81	2.00	1.68	1.13	2.42	2.55	.21		57.09	*57.49*	1.55	2.00
12			55.25		55.13	*55.82*	57.14	*58.09*	54.83	55.33	53.21	*53.80*	54.64	*55.11*	53.56	53.07	50.84		57.41	*58.66*	50.67	50.51
			1.85		1.49	2.55	2.05	1.69	2.04	2.87	1.69	1.65	1.94	3.31	1.68	3.03	2.87		59.06	*60.24*	1.86	1.98
13			57.10		56.62	*58.37*	59.19	*59.78*	56.87	*58.20*	54.90	*55.45*	56.58	*58.42*	55.24	*56.10*	53.71		59.85	*60.02*	52.53	52.49
			2.35		2.73	1.83	2.12	1.76	.74	.94	1.90	2.01	.63	.75	2.67	1.18	3.06		61.02	*61.81*	1.65	1.73
14			59.45		59.35	*60.20*	61.31	*61.54*	57.61	*59.14*	56.80	*57.46*	57.21	*59.17*	57.91	57.28	56.77		62.60	62.21	54.18	*54.22*
			2.80		2.81	1.42	2.51	.55			1.99	.51			2.80	.99	5.63		64.57	62.60	1.77	1.53
15			62.25		62.16	61.62	63.82	62.09			58.79	57.97			60.71	58.27	62.40		64.96	62.60	55.95	55.75
			2.20		2.18	.44	1.34								1.57	.31			65.75	62.99	1.57	.83
16	67.4		64.45		64.34	62.06	65.16								62.28	58.58			65.75	63.39	57.52	56.58

17	.5				2.46	.58	1.26								.91	.48			66.32	62.99		
	67.9				66.80	62.64	66.42								63.19	59.06			66.32	63.78		
18	.3				.43	.14	.78								.16	-.40			66.32	64.17		
	68.2				67.23	62.78	67.20								63.35	58.66						
19	.0				.20	.13	-.16								.43	.22						
	68.2				67.52	62.91	67.04								63.78	58.88						
20	-.1				.16	.29									.08	-.48						
	68.1				67.68	63.20									63.86	58.50						
21	.0														-.47							
	68.1														63.39							
22	.1																					
	68.2																					
23	-.1																					
	68.1																					
24	.1																					
	68.2																					
25	.0																					
	68.2																					
26	.7																					
	68.9																					

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[1] See Hitchcock, twelfth reference.

[2] See Hastings, fourth reference.

[3] See Hastings, first reference.

[4] One-half year should be added to the ages given for the measurements in this column.

TABLE 33.—*Height and increments in inches, according to various measurements*—Continued.

Ages, in years.	101		102	103	104		105		106		107		108		109		110		111		112	
	Misawa, 1901, Japan.		Wissawa, 1909, Japan.	Weissenberg, 1911, German.					Goddard, 1912, Vineland, N. J. (5,656 M., 4,723 F.).						Baldwin, 1913, Chicago and New York (100 M., 100 F.).		Baldwin, 1913, American, F.W. Parker School, Chicago (1 M., 1 F.).		Baldwin, 1913, American, Friends' School, Washington, (1 M., 1 F.).		Baldwin, 1913, Chicago (501 M., 706 F.).	
				Poor.	Middle.		Wealthy.		Moron.		Imbecile.		Idiot.									
	M.	F.	M.	M.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0	19.30	19.20																				
1	9.64 28.94	9.50 28.70																				
2	2.36 31.30	2.40 31.10																				
3	2.32 33.62	2.33 33.43																				
4	2.58 36.20	2.42 35.85																				
5	2.17 38.37	2.14 37.99							40.3 4.2	*41.4* 1.6	40.4 3.6	38.5 5.0	39.7 2.3	36.3 3.7	40.22 43.00	40.01 42.90						
6	2.10 40.47	2.32 40.31							44.5 3.2	43.0 4.5	44.0 1.1	43.5 2.3	42.0 3.1	39.0 5.0	45.41	45.17	47.6				45.7	45.1
6½															46.66	46.31	49.6				46.9	46.2
7	2.15 42.62	1.90 42.21							47.7 .5	47.5 1.0	45.1 2.4	*45.8* 1.5	45.1 1.7	44.0 1.5	47.95	47.24					47.5	*47.6*
7½															48.31	48.26					49.2	48.4
8	2.18 44.80	1.89 44.10							48.2 2.5	*48.5* 2.4	47.5 2.3	47.3 1.7	46.8 2.5	45.5 .9	49.48	49.35	51.1	47.83			50.3	49.2
8½															49.56	50.39	52.2	49.21			51.5	49.7
9	1.78 46.58	1.65 45.75							50.7 .9	*50.9* .7	49.8 1.2	49.0 1.3	49.3 —.9	46.4 1.9	51.36	51.10	53.4	50.00		49.33 50.31	51.6	51.5
9½															52.19	*52.00*	54.3				52.7	51.5
10	1.73 48.31	1.65 47.40		48.88 .66	49.08 1.66		49.80 1.94		51.6 2.1	51.6 1.2	51.0 2.4	50.3 .8	48.4 2.8	48.3 1.5	53.66	53.33	54.8	50.98	52.57	51.36	53.5	53.0
10½															54.75	54.05		51.96	53.28	*52.58*	54.7	54.2
11	1.69 50.00	2.16 49.56		49.54 1.94	50.74 2.60		51.74 2.50		53.7 2.1	52.8 2.9	53.4 1.3	51.1 4.0	51.2 .5	49.8 .9	55.34	55.16	57.3	53.43	54.26	*53.62*	54.7	*55.1*
11½															56.71	*56.98*	58.7	54.72	54.84	*54.98*	55.9	*56.6*
12	1.46 51.46	2.52 *52.08*		51.48 .98	53.44 .86		54.24 1.02		55.8 1.6	55.7 3.1	54.7 2.0	*55.1* 2.1	51.7 3.6	50.7 4.3	57.17	*57.70*	60.0	55.66	55.70	*56.30*	57.1	*57.4*
12½															57.75	*59.35*	61.3		57.09	*57.75*	57.9	*58.1*

13.	1.77	2.64	57.87	52.46	54.20		55.26		57.4	*58.8*	56.7	*57.2*	55.3	55.0	58.23	*59.48*	61.3	58.73	58.07	*58.62*	59.0	*60.2*
	53.23	*54.72*	2.03						2.2	.4	2.2	.2	.7	.3								
13½.															59.48	*60.59*	65.6	59.96	60.11	59.74	59.8	*60.9*
14.	2.48	1.66	59.90						59.6	59.2	58.9	57.4	56.0	55.3	61.02	*61.33*	66.8	61.98	62.49	60.60	60.9	*61.8*
	55.71	*56.38*	1.79						2.6	1.5	1.8	1.2	2.2	1.2								
14½.															62.17	*62.48*	68.6	62.48	63.98	60.75	62.6	62.0
15.	1.87	.58	61.69						62.2	60.7	60.7	58.6	58.2	56.5	63.71	62.60	68.6	62.83	65.31	61.78	64.5	62.6
	57.58	56.96	.91						1.4	.5	1.7	.7	.8	.8								
15½.															65.12	63.26	68.6	63.54	65.87	61.80	64.7	62.6
16.			62.60						63.6	61.2	62.4	59.3	59.0	57.3	65.68	63.00		63.58		61.80	65.7	62.9
			.39						1.2	0.0	.7	—.2	2.6	1.3								
16½.															67.36	63.70		63.62		61.80	65.5	63.0
17.			62.99						64.8	61.2	63.1	59.1	61.6	58.6	67.46	63.42		63.62			66.5	62.9
									.4	— .4	1.0	.9	.2	—1.5								
17½.															67.45	63.90					66.5	63.7
18.									65.2	60.8	64.1	60.0	61.8	57.1	67.48	64.00		64.11			66.5	63.8
									3.2	.5	.1	—1.1	— .3	1.6								
19.									68.4	61.3	64.2	58.9	61.5	58.7								
									—2.4	.3	.9	2.4	1.8	— .4								
20.									66.0	61.6	65.1	61.3	63.3	58.3								
									— .8	.4	0.0	— .8	.4	— .4								
21.									65.2	62.0	65.1	60.5	63.7	57.9								
									.9	— .1	— .4	.1	— .4	1.7								
22.									66.1	61.9	64.7	60.6	63.3	59.6								
									— .8	.7	0.0	— .6	— .2	.1								
23.									65.3	62.6	64.7	60.0	63.1	59.7								
									.9	— .1	— .2	.5	.2	— .7								
24.									66.2	62.5	64.5	60.5	63.3	59.0								
									—1.3	—1.2	— .2	— .4	— .8	.4								
25.									64.9	61.3	64.3	60.1	62.5	59.4								
									.5	— .5	.9	1.2	1.8	—1.7								
26.									65.4	60.8	65.2	61.3	64.3	57.7								
									1.6	— .2	— .3	—1.3	—1.0	2.3								
27.									67.0	60.6	64.9	60.0	63.3	60.0								
									—1.9	1.2	— .5	.9	.6	—3.0								
28.									65.1	61.8	64.4	60.9	63.9	57.0								
									.9	.2	— .9	—1.4	.5	1.3								
29.									66.0	62.0	63.5	59.5	64.4	58.3								
									—1.7	.1	.3	1.9	— .7	— .5								
30.									64.3	62.1	63.8	61.4	63.7	57.8								
									1.5	— .2	1.0	—1.6	— .1	1.5								
31.									65.8	61.9	64.8	59.8	63.6	59.3								

TABLE 34.—*Weight and increments, in pounds, according to various measurements.*[1]

Ages in years.	112		113		114		115		116		117		118		119		120		121		122	
	Boyd, 1861, London.		Quetelet, 1836, Belgium, selected (10 M., 10 F.).		Bowditch, 1875, Boston (13,691 M., 10,904 F.).		Roberts, 1878, England.														Bowditch, 1878, foreign.	
							Artisan class (13,931).		Favored classes (7,709).		All classes.		Towns (2,568).		Soldiers, policemen, etc. (29,531).		Feeble-minded (829).		Town boys (7,855).			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0	5.06	4.25	6.8	6.6							7.1	6.9										
			15.0	12.4																		
1	1 to 2 yrs.		21.8	19.0																		
			2.5	5.3																		
2	14.31	13.13	24.3	24.3							32.5											
			3.3	3.0							1.5											
3	3 to 4 yrs.		27.6	27.3							34.0	31.9										
			3.3	3.3							3.3	3.6										
4	20.00	18.47	30.9	30.6			41.2				37.3	35.5					35.0					
			4.2	3.1			8.8				2.6	4.1					4.0					
5	5 to 6 yrs.		35.1	33.7	41.1	39.7	50.0				39.9	39.6			37.31		39.0					
			4.1	3.1	4.1	3.6	4.2				4.5	2.8			3.36		4.0					
6	25.50	24.56	39.2	36.8	45.2	43.3	54.2				44.4	42.4			40.67		43.0					
			4.2	2.4	3.9	4.2	2.7				5.3	4.3			4.66		3.5					
7			43.4	39.2	49.1	47.5	56.9				49.7	46.7	54.83		45.33		46.5					
			4.2	2.7	4.8	4.5	2.1				5.2	5.5	5.17		3.45		4.0					
8			47.6	41.9	53.9	52.0	59.0				54.9	52.2	60.00		48.78		50.5					
			4.2	4.4	5.3	5.1	3.6				5.5	3.3	2.02		4.78		2.0					
9	7 to 13 yrs.		51.8	46.3	59.2	57.1	62.6				60.4	55.5	62.02		53.56		52.5					
			3.8	4.6	6.1	5.3	3.7				7.1	6.5	4.32		2.92		6.5					
10	42.31	38.31	55.6	50.9	65.3	62.4	66.3		67.4		67.5	62.0	66.34		56.48		59.0				70.6	
			3.9	5.3	4.9	6.4	3.2		5.5		4.5	6.1	3.32		2.71		5.5				4.7	
11			59.5	56.2	70.2	68.8	69.5		72.9		72.0	68.1	69.66		59.19		64.5		66.31		75.3	
			4.4	7.7	6.7	9.5	4.2		7.4		4.7	8.3	5.46		3.83		6.0		3.15		10.6	
12			63.9	63.9	76.9	*78.3*	73.7		80.3		76.7	76.4	75.12		63.02		70.5		69.46		85.9	
			9.1	7.8	7.9	9.4	4.6		8.3		5.9	10.6	6.82		7.80		6.5		4.22		8.5	
13			73.0	71.7	84.8	*88.7*	78.3		88.6		82.6	*87.0*	81.94		70.82		77.0		73.68		94.4	
			8.8	8.3	10.1	9.7	6.3		10.6		9.4	9.7	10.30		10.75		8.5		4.59		5.5	
14			81.8	80.0	94.9	*98.4*	84.6		99.2		92.0	*96.7*	92.24		80.57		85.5		78.27		99.9	
			9.0	8.2	12.2	7.7	12.2		11.2		10.7	8.1	13.06		15.34		9.0		3.34		16.7	
15	14 to 19 yrs.		90.8	88.2	107.1	106.1	96.8		110.4		102.7	*104.8*	105.30		95.91		94.5		81.61		116.6	
			9.3	7.7	13.9	5.9	11.9		17.9		16.3	7.9	13.45		14.89		8.5		15.18		9.2	
16	68.00	63.90	100.1	95.9	121.0	112.0	108.7		128.3		119.0	112.7	118.75		110.80		103.0		96.79		125.8	

17.			9.5	7.3	6.5	3.5	7.7		12.7		11.9	2.2	8.75		13.21		7.0		11.91		9.4	
			109.6	103.2	127.5	115.5	116.4		141.0		130.9	114.9	127.50		124.01		110.0		108.70		135.2	
18.			9.2	6.6	5.1	-.3	6.9		5.0		6.5	2.8	12.50		5.42		6.0		7.70		3.0	
			118.8	109.8	132.6	115.2	123.3		146.0		137.4	117.7	140.00		129.43		116.0		116.40		138.2	
19.			8.2	5.1			5.1		2.3		2.2	6.0	1.16		4.08		4.5		6.90			
			127.0	114.9			128.4		148.3		139.6	123.7	141.16		133.51		120.5		123.30			
20.			4.2	2.4			2.2		3.7		3.7	-.5			2.98		1.0		5.10			
			131.2	117.3			130.6		152.0		143.3	123.2			136.49		121.5		128.40			
21.									.3		1.9	-2.0			1.43		.5		2.20			
									152.3		145.2	121.2			137.92		122.0		130.60			
22.									2.4		1.7	3.0			1.27		.5					
									154.7		146.9	124.2			139.19		122.5					
23.											.9	2.2										
	20 to 29 yrs.										147.8	126.4										
24.											.2	-5.8										
	90.91	86.81									148.0	120.6										
25.											1.2											
											149.2											
26.											2.5											
											151.7											
27.											.6											
											152.3				141.10		123.0					
28.											1.6											
											153.9											
29.											.3											
											154.2											
30.											5.6											
											159.8											
33.		(2)																				
34.																						
35.											164.3											
36.													162.10		138.27							
40.											163.1											
42.																						
43.																						
46.											166.1											
47.																						
48.											158.1											
49.																						
50.											182.1											
51.																						
52.																						
53.																						

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[1] The references for weight are the same as for height except as indicated.

[2] According to Boyd, in 1861, London, weights were, for ages 30 to 39 years, males 98.22 pounds, females, 87; 40 to 50 years, males 102, females 84.58; 50 to 60 years, males 102.03, females 86; 60 to 70 years, males 103.81, females 86.90; 70 to 80 years, males 106.81, females 80.25; 80 to 90 years, males 99, females 79.03.

TABLE 34.—*Weight and increments, in pounds, according to various measurements*—Continued.

Ages in years.	123		124		125		126		127		128		129		130		131		132		133	
	British Anthrop. Com., 1880, England, public schools, military and naval colleges (29,405).		Peckham, 1881, Milwaukee (4,773 M., 4,891 F.).		Hertel, 1882, Denmark (17,134 M., 11,250 F.).		Peckham, 1882, America, children (228).		British, report, 1883, English (first 4 years from Holt).		Shuttleworth, 1884, England. General population.		Shuttleworth, 1884, England. Idiots and imbeciles (1,209).		Daffner, 1885, Germany (700).		Greenwood, 1886, American, white (743).		Greenwood, 1886, American, negro (723).		Michailoff, 1887, Russia, Dorfschüler.[1]	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0	......	......	......	......	......	......	......	......	7.5	7.2	......	......	......	......	......	......	......	......	......	......	......	......
	......	......	......	......	......	......	......	......	13.0	12.6	......	......	......	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	20.5	19.8	......	......	......	......	......	......	......	......	......	......	......	......
	......	......	......	......	......	......	......	......	6.0	5.7	......	......	......	......	......	......	......	......	......	......	......	......
2	......	......	......	......	......	......	24.39	23.11	26.5	25.5	......	......	......	......	......	......	......	......	......	......	......	......
	......	......	......	......	......	......	5.99	6.19	4.7	4.5	......	......	......	......	......	......	......	......	......	......	......	......
3	......	......	......	......	......	......	30.38	29.30	31.2	30.0	......	......	......	......	......	......	......	......	......	......	......	......
	......	......	......	......	......	......	4.62	3.87	3.8	4.0	......	......	......	......	......	......	......	......	......	......	......	......
4	......	......	38.8	36.3	......	......	35.00	33.17	35.0	34.0	......	......	......	......	......	......	......	......	......	......	......	......
	......	......	2.3	3.7	......	......	......	......	6.2	5.2	......	......	......	......	......	......	......	......	......	......	......	......
5	......	......	41.1	40.0	......	......	......	......	40.0	39.2	......	39.2	39.0	37.5	......	......	......	......	......	......	......	......
	......	......	3.7	3.1	......	......	......	......	4.4	2.5	......	2.5	4.0	3.5	......	......	......	......	......	......	......	......
6	......	......	44.8	43.1	46.3	44.1	......	......	44.4	41.7	......	41.7	43.0	41.0	......	......	......	......	......	......	......	......
	......	......	4.3	3.9	3.3	3.3	......	......	5.3	5.8	......	5.8	3.5	4.0	......	......	......	......	......	......	......	......
7	......	......	49.1	47.0	49.6	47.4	......	......	49.7	47.5	......	47.5	46.5	45.0	......	......	......	......	......	......	......	......
	......	......	4.7	3.9	3.3	4.4	......	......	5.2	4.6	......	4.6	4.0	4.0	......	......	......	......	......	......	......	......
8	......	......	53.8	50.9	52.9	51.8	......	......	54.9	52.1	55.0	52.1	50.5	49.0	......	......	......	......	......	......	48.94	46.96
	......	......	5.7	5.5	4.4	4.4	......	......	5.5	3.4	5.0	3.4	5.0	4.0	......	......	......	......	......	......	2.65	4.19
9	......	......	59.5	56.4	57.3	56.2	......	......	60.4	55.5	60.0	55.5	55.5	53.0	......	......	......	......	......	......	51.59	51.15
	......	......	5.9	6.0	5.5	5.5	......	......	7.1	6.5	5.0	7.4	3.5	6.0	......	......	......	......	......	......	5.51	3.97
10	73.97	......	65.4	62.4	62.8	61.7	......	......	67.5	62.0	65.0	62.9	59.0	59.0	......	......	......	......	......	......	57.10	55.12
	4.75	......	5.5	6.4	5.5	5.5	......	......	4.5	6.0	5.0	5.2	5.5	7.0	......	......	......	......	......	......	5.29	4.62
11	78.72	......	70.9	68.8	68.3	67.2	......	......	72.0	68.0	70.0	68.1	64.5	*66.0*	......	......	66.35	63.9	68.7	64.2	62.39	59.74
	6.19	......	5.2	9.0	5.6	7.8	......	......	4.7	8.4	7.5	8.3	6.0	6.0	......	......	6.85	6.6	2.8	14.8	3.30	3.97
12	84.91	......	76.1	*77.8*	73.9	*75.0*	......	......	76.7	76.4	77.5	76.4	70.5	*72.0*	......	......	73.20	70.5	71.5	*79.0*	65.69	63.71
	6.66	......	8.8	10.2	6.6	8.8	......	......	5.9	10.8	7.5	10.8	6.5	8.0	......	......	8.05	7.7	16.0	11.0	3.97	6.61
13	91.57	......	84.9	*88.0*	80.5	*83.8*	......	......	82.6	*87.2*	85.0	*87.2*	77.0	*80.0*	76.15	......	81.25	78.2	87.5	*90.0*	69.66	*70.32*
	10.58	......	10.9	9.6	8.8	8.8	......	......	9.4	9.5	7.5	9.5	8.5	8.0	7.77	......	5.95	11.9	4.9	9.0	......	......
14	102.15	......	95.8	*97.6*	89.3	*92.6*	......	......	92.0	*96.7*	92.5	*96.7*	85.5	*88.0*	83.92	......	87.2	*90.1*	92.4	*99.0*	......	......
	12.17	......	13.2	8.3	13.3	10.0	......	......	10.7	9.3	10.0	9.6	9.0	7.0	12.28	......	5.0	11.1	5.9	2.6	......	......
15	114.32	......	109.0	105.9	102.6	102.6	......	......	102.7	*106.0*	102.5	*106.3*	94.5	*95.0*	96.20	......	92.2	*101.2*	98.3	*101.6*	......	......

16	15.16	......	13.1	4.7	14.2	9.8	......	......	16.3	6.1	15.0	6.8	8.5	7.0	4.18	......	15.1	6.0	11.5	5.7	......	......
	129.48	......	122.1	110.6	116.8	112.4	......	......	119.0	113.1	117.5	113.1	103.0	102.0	100.38	......	107.3	107.2	109.8	107.3	......	......
17	12.18	......	8.3	2.7	10.0	......	......	......	11.0	2.9	17.5	2.4	7.0	4.0	6.50	......	......	......	......	......	......	......
	141.66	......	130.4	113.3	126.8	......	......	......	130.0	115.0	135.0	115.5	110.0	106.0	106.88	......	......	......	......	......	......	......
18	4.78	......	7.4	−.8	7.7	......	......	......	7.4	5.1	7.5	5.6	6.0	4.0	17.58	......	......	......	......	......	......	......
	146.44	......	137.8	112.5	134.5	......	......	......	137.4	121.1	142.5	121.1	116.0	108.0	124.46	......	......	......	......	......	......	......
19	2.02	......	......	......	......	......	......	......	2.2	2.7	1.2	2.7	4.5	4.5	−1.99	......	......	......	......	......	......	......
	148.46	......	......	......	......	......	......	......	139.6	123.8	143.7	123.8	120.5	108.5	122.47	......	......	......	......	......	......	......
20	3.90	......	......	......	......	......	......	......	3.7	−.4	1.3	−.4	1.0	0.0	3.11	......	......	......	......	......	......	......
	152.36	......	......	......	......	......	......	......	143.3	123.4	145.0	123.4	121.5	108.5	125.58	......	......	......	......	......	......	......
21	.36	......	......	......	......	......	......	......	1.9	−1.6	1.2	−1.6	.5	......	.54	......	......	......	......	......	......	......
	152.72	......	......	......	......	......	......	......	145.2	121.8	146.2	121.8	122.0	......	126.12	......	......	......	......	......	......	......
22	.03	......	......	......	......	......	......	......	......	......	1.3	1.6	.5	......	19.88	......	......	......	......	......	......	......
	152.75	......	......	......	......	......	......	......	......	......	147.5	123.4	122.5	......	146.00	......	......	......	......	......	......	......
23	......	......	......	......	......	......	......	......	......	......	1.2	.7	......	......	......	......	......	......	......	......	......	......
	......	......	......	......	......	......	......	......	......	......	148.7	124.1	......	......	......	......	......	......	......	......	......	......
24	......	......	......	......	......	......	......	......	......	......	1.3	−3.3	......	......	......	......	......	......	......	......	......	......
	......	......	......	......	......	......	......	......	......	......	150.0	120.8	......	......	......	......	......	......	......	......	......	......
28	......	......	......	......	......	......	......	......	......	......	151.2	120.0	123.0	109.0	......	......	......	......	......	......	......	......
36	......	......	......	......	......	......	......	......	......	......	152.5	120.8	......	......	......	......	......	......	......	......	......	......
46	......	......	......	......	......	......	......	......	......	......	155.0	118.6	......	......	......	......	......	......	......	......	......	......
48	......	......	......	......	......	......	......	......	......	......	157.5	104.0	......	......	......	......	......	......	......	......	......	......

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[1] One-half year should be added to the ages given for the measurements in this column.

TABLE 34.—*Weight and increments, in pounds, according to various measurements*—Continued.

Ages in years.	134		135		136		137		138		139		140		141		142		143		144	
	Michailoff, 1887, Russia, stadtschüler.[1]		Cordeiro, 1887, U. S. Navy (4,812).		Suligowski, 1887, Radom (1,133).[1]		Stevenson, 1888.		Geissler, 1888, Gohlis (1,386 M., 1,420 F.).[3]		Erisman, 1888, Moscow (2,453 M., 1,495 F.).		Key, 1889, Sweden (15,000 M., 3,000 F.).		Hrdlička, 1899, Italian children.		Hrdlička, 1899, whites and blacks.		Key, 1889, Sweden, mittelschulen.		Key, 1889, Sweden, volksschulen.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
5.	...	...	...	...	...	...	40.49	39.63	...	...	...	...	...	...	...	...	33.00	34.00	...	...	...	...
	...	...	...	...	...	...	4.30	3.21	...	...	...	...	...	...	...	...	7.00	6.00	...	...	...	...
6.	...	...	...	...	...	...	44.79	42.84	47.2	45.2	44.1	42.8	45.2	...	38.80	39.00	40.00	40.00	45.19	45.63	48.06	45.41
	...	...	...	...	...	...	4.60	4.24	3.3	4.2	4.4	4.2	5.1	...	5.90	2.30	5.00	2.00	5.07	1.99	1.54	3.53
7.	...	...	...	...	...	...	49.39	47.08	50.5	49.4	48.5	47.0	50.3	47.6	44.70	41.30	45.00	42.00	50.26	47.62	49.60	48.94
	...	...	...	...	...	...	5.02	5.04	4.0	4.6	4.6	1.5	7.5	7.5	1.50	1.70	2.00	3.00	7.50	7.50	7.28	2.21
8.	48.50	46.96	...	...	55.3	...	54.41	52.12	54.5	54.0	53.1	48.5	57.8	55.1	46.20	43.00	47.00	45.00	57.76	55.12	56.88	51.15
	4.63	1.54	...	...	6.5	...	5.41	4.16	4.4	3.8	8.0	7.9	6.8	4.2	6.80	8.00	6.00	7.00	6.83	4.18	1.10	5.07
9.	53.13	48.50	...	...	61.8	...	59.82	56.28	58.9	57.8	61.1	56.4	64.6	59.3	53.00	51.00	53.00	52.00	64.59	59.30	57.98	56.22
	7.93	7.94	...	...	6.2	...	6.58	5.89	4.6	5.0	6.1	4.0	2.2	5.5	3.30	6.50	4.00	8.00	0.0	5.51	5.29	5.51
10.	61.06	56.44	...	...	68.0	...	66.40	62.17	63.5	62.8	67.2	60.4	66.8	64.8	56.30	*57.50*	57.00	*60.00*	64.59	*64.81*	63.27	61.73
	6.18	3.74	...	...	5.4	...	4.69	6.30	7.0	6.9	6.2	6.4	4.2	5.5	5.50	7.80	7.00	5.00	6.40	5.51	10.80	5.51
11.	67.24	60.18	...	...	73.4	...	71.09	68.47	70.5	69.7	73.4	66.8	71.0	70.3	61.80	*65.30*	64.00	*65.00*	70.99	70.32	74.07	67.24
	6.17	6.62	...	...	8.7	...	5.72	8.88	5.8	8.1	9.5	13.7	5.1	8.8	7.10	6.80	6.00	7.00	5.07	8.82	—1.32	7.49
12.	73.41	66.80	...	...	82.1	...	76.81	*77.35*	76.3	*77.8*	82.9	80.5	76.1	*79.1*	68.90	*72.10*	70.00	*72.00*	76.06	*79.14*	72.75	*74.73*
	9.48	13.67	...	...	9.8	...	6.91	10.47	3.1	7.3	8.6	8.8	6.8	8.2	3.10	6.90	11.00	12.00	6.83	8.16	6.62	8.38
13.	82.89	80.47	...	...	91.9	...	83.72	*87.82*	79.4	*85.1*	91.5	89.3	82.9	*87.3*	72.00	*79.00*	81.00	*84.00*	82.89	*87.30*	79.37	*83.11*
	8.60	8.81	...	...	11.7	...	9.74	9.74	...	...	11.2	5.1	10.4	11.5	13.00	23.00	3.00	13.00	10.36	11.46	2.20	7.94
14.	91.49	89.28	86.11	...	103.6	...	93.46	*97.56*	...	...	102.7	94.4	93.3	*98.8*	85.00	*102.00*	84.00	*97.00*	93.25	*98.76*	81.57	*91.05*
	11.24	4.63	10.23	...	8.9	...	11.44	7.88	...	...	14.1	5.5	9.9	9.0	—9.00	...	1.00	15.00	22.05	9.04	16.09	10.36
15.	102.73	93.91	96.34	...	112.5	...	104.90	*105.44*	...	...	116.8	99.9	103.2	*107.8*	76.00	...	85.00	*112.00*	115.30	107.80	97.66	*101.41*
	14.11	...	13.21	...	10.9	...	15.10	6.92	...	...	9.8	1.1	12.1	6.0	...	...	30.00	2.00	...	...	...	...
16.	116.84	...	109.55	...	123.4	...	120.00	112.36	...	...	126.6	101.0	115.3	113.8	...	...	115.00	114.00	...	...	...	...
	...	...	10.60	...	3.4	...	9.19	2.85	...	...	132.5	...	11.7	6.6	...	...	7.00	...	...	...	...	...
17.	...	...	120.15	...	126.8	...	129.19	115.21	...	...	...	...	127.0	120.4	...	...	122.00	...	...	...	...	...
	...	...	...	...	.4	...	5.78	1.22	...	...	...	...	8.1	3.7	...	...	...	...	...	...	...	...
18.	...	...	...	...	127.2	...	134.97	116.43	...	...	...	...	135.1	124.1	...	...	...	104.00	...	...	...	...
	...	...	...	...	3.5	...	...	...	...	...	...	...	4.5	2.5	...	...	...	...	...	...	...	...
19.	...	...	...	...	130.7	...	...	...	...	...	...	...	139.6	126.6	...	...	...	...	...	...	...	...
	...	...	...	...	6.2	...	...	...	...	...	...	...	4.1	.6	...	...	...	...	...	...	...	...
20.	...	...	...	...	136.9	...	...	...	...	...	...	...	143.7	127.2	...	...	...	...	...	...	...	...
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Ages in years.	145		146		147		148		149		150		151		152		153		154		155	
	Axel Key, 1889, Sweden, volksschüler.[1]		Simon, 1889, French (223).		Greenwood, 1890, American, white (2,055).		Greenwood, 1890, foreign (385).		Pagliani, 1890, Turin (1,048 M., 968 F.).		Stevenson, 1890, England, nonlaboring.		Stevenson, 1890, England, laboring.		Hasse, 1891, Germany, II Burgerschule.[1]		Hasse, 1891, Germany, I Burgerschule.[1]		Barnes, 1892, Oakland, Cal.		Schmidt, 1892, Saalfeld (4,699 M., (4,807 F.).	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
3.	......	......	......	......	......	......	......	......	27.3	24.7	......	......	......	......	......	......	......	......	......	......	......	......
	......	......	......	......	......	......	......	......	2.5	4.2	......	......	......	......	......	......	......	......	......	......	......	......
4.	......	......	......	......	......	......	......	......	29.8	28.9	......	......	......	......	......	......	......	......	......	......	......	......
	......	......	......	......	......	......	......	......	3.7	4.2	......	......	......	......	......	......	......	......	......	......	......	......
5.	......	......	......	......	......	......	......	......	33.5	33.1	......	......	......	......	......	......	......	......	......	......	......	......
	......	......	......	......	......	......	......	......	3.3	3.1	......	......	......	......	......	......	......	......	......	......	......	......
6.	......	......	......	......	......	......	......	......	36.8	36.2	......	......	......	......	......	......	......	......	47.6	45.9	41.9	40.1
	......	......	......	......	......	......	......	......	6.0	2.8	......	......	......	......	......	......	......	......	2.6	2.2	4.8	4.7
7.	......	......	......	......	......	......	......	......	42.8	39.0	......	......	......	......	......	......	......	......	50.2	48.1	46.7	44.8
	......	......	......	......	......	......	......	......	2.8	2.9	......	......	......	......	......	......	......	......	4.0	4.1	4.4	3.7
8.	56.88	51.15	44.09	......	......	......	......	......	45.6	41.9	......	......	......	......	53.57	52.47	55.56	54.23	54.2	52.2	51.1	48.5
	1.10	5.07	2.21	......	......	......	......	......	3.8	6.4	......	......	......	......	3.97	4.41	5.94	5.51	5.4	6.4	4.7	5.3
9.	57.98	56.22	46.30	......	......	......	......	......	49.4	48.3	......	......	......	......	57.54	56.88	61.50	59.74	59.6	58.6	55.8	53.8
	5.29	5.51	12.12	......	......	......	......	......	5.3	6.2	......	......	......	......	4.63	5.29	1.33	3.09	7.1	4.6	2.8	4.8
10.	63.27	61.73	58.42	......	......	......	......	......	54.7	54.5	67	......	66	......	62.17	62.17	62.83	62.83	66.7	63.2	58.6	58.6
	10.80	5.51	1.10	......	......	......	......	......	3.9	4.8	6	......	4	......	5.29	6.17	6.83	9.26	5.3	6.5	7.1	6.4
11.	74.07	67.24	59.52	......	67.50	65.92	......	63.77	58.6	*59.3*	73	......	70	......	67.46	*68.34*	69.66	*72.09*	72.0	69.7	65.7	65.0
	—1.32	7.49	11.03	......	3.46	.28	......	6.81	6.0	5.7	7	......	4	......	7.94	8.16	8.16	8.38	5.9	9.2	5.3	7.1
12.	72.75	*74.73*	70.55	......	70.96	66.20	76.75	70.58	64.6	*65.0*	80	......	74	......	75.40	*76.50*	77.82	*80.47*	77.9	*78.9*	71.0	*72.1*
	6.62	8.38	2.20	......	7.32	14.44	.73	16.08	8.2	11.1	8	......	4	......	3.30	7.28	2.43	8.15	11.5	1.8	6.2	8.6
13.	79.37	*83.11*	72.75	......	78.28	*80.64*	77.48	*86.66*	72.8	*76.1*	88	......	78	......	78.70	*83.78*	80.25	*88.62*	89.4	*90.7*	77.2	*80.7*
	2.20	7.94	10.02	......	9.17	11.08	13.98	13.34	7.9	8.8	10	......	6	......	6.84	9.25	10.36	9.26	7.6	7.5	2.6	......
14.	81.57	*91.05*	82.77	......	87.45	*91.72*	91.46	*100.00*	80.7	*84.9*	98	......	84	......	85.54	*93.03*	90.61	*97.88*	97.0	*98.2*	79.8	......
	......	......	9.82	......	6.00	8.38	14.65	4.77	11.5	11.7	12	......	10	......	......	......	......	......	11.1	10.7	......	......
15.	......	......	92.59	......	93.45	*100.10*	106.11	104.77	92.2	*96.6*	110	......	94	......	......	......	......	......	108.1	*108.9*	......	......
	......	......	13.23	......	17.82	11.06	.89	5.39	11.9	4.2	16	......	12	......	......	......	......	......	13.5	.9	......	......
16.	......	......	105.82	......	111.27	111.16	107.00	*110.16*	104.1	100.8	126	......	106	......	......	......	......	......	121.6	109.8	......	......
	......	......	......	......	7.73	5.95	......	......	12.1	3.9	14	......	10	......	......	......	......	......	10.1	7.9	......	......
17.	......	......	......	......	119.00	117.11	......	......	116.2	104.7	140	......	116	......	......	......	......	......	131.7	117.7	......	......
	......	......	......	......	7.60	1.81	......	......	2.4	2.4	6	......	6	......	......	......	......	......	6.0	.6	......	......
18.	......	......	112.44	......	126.60	118.92	......	......	118.6	107.1	146	......	122	......	......	......	......	......	137.7	118.3	......	......
	......	......	......	......	10.23	1.33	......	......	2.7	......	2	......	6	......	......	......	......	......	......	......	......	......
19.	......	......	......	......	136.83	120.25	......	......	121.3	......	148	......	128	......	......	......	......	......	......	......	......	......
	......	......	......	......	......	......	......	......	......	......	2	......	4	......	......	......	......	......	......	......	......	......
20.	......	......	......	......	......	......	......	......	......	......	150	......	132	......	......	......	......	......	......	......	......	......
	......	......	......	......	......	......	......	......	......	......	2	......	4	......	......	......	......	......	......	......	......	......
21.	......	......	117.94	......	......	......	......	......	......	......	152	......	136	......	......	......	......	......	......	......	......	......

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[1] One-half year should be added to the ages given for the measurements in this column.

[2] See Geissler, first reference.

TABLE 34.—*Weight and increments, in pounds, according to various measurements*—Continued.

Ages in years.	156		157		158		159		160		161		162		163		164		165		166		167	
	Hastings, 1893, American, Amherst College (1,321).		Hastings, 1893, American, Amherst College (2,106).		Hanna, 1893, Oberlin (500 students) half-year measurements.		Hanna, 1893, Oberlin (1,600 students) half-year measurements.		Porter, 1893, St. Louis (16,295 M., 18,059 F.).		Miwa, 1893, Japan (1,250 M., 2,800 F.).		Sack, 1893, Russia, gymnasien.[1]		Kosmowsky, 1894, Russia, ferien-kolonien.[1]		West, 1894, Worcester (3,250).		Porter, 1894, St. Louis (15,325 M., 16,112 F.).		Beyer, 1895, American naval cadets (4,537).		Hall, 1895, Pennsylvania (2,434).	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
3											31.0	29.6												
											2.0	3.0												
4											33.0	32.6												
											3.1	1.7												
5											36.1	34.3					42.63	39.36						
											1.8	2.7					3.41	4.34						
6									43.7	41.7	37.9	37.0					46.04	43.70	43.55	41.74				
									4.1	4.2	4.0	2.4					3.33	4.26	4.23	4.17				
7									47.8	45.9	41.9	39.4					49.37	47.96	47.78	45.91				
									4.7	4.6	2.8	3.8					4.27	3.64	6.65	4.54				
8									52.5	50.5	44.7	43.2	52.03		49.82	46.30	53.64	51.50	52.43	50.45				
									5.0	4.8	4.6	4.9	6.83		2.65	2.86	6.17	5.87	5.03	4.85				
9									57.5	55.3	49.3	48.1	58.86		52.47	49.16	59.81	57.37	57.46	55.30			58.4	
									4.9	5.3	3.3	4.3	4.30		4.85	5.29	6.70	6.15	4.99	5.32			7.7	
10									62.4	60.6	52.6	52.4	63.16		57.32	54.45	66.51	63.52	62.45	60.62			66.1	
									5.9	6.0	4.6	5.2	5.51		5.07	4.85	4.49	6.42	5.91	5.86			5.6	
11									68.3	66.6	57.2	*57.6*	68.67		62.39	59.30	71.00	69.94	68.36	66.48			71.7	
									5.6	7.7	4.9	8.6	6.29		5.95	8.16	7.75	9.80	5.53	7.74			8.8	
12									73.9	*74.3*	62.1	*66.2*	74.96		68.34	67.46	78.75	*79.74*	73.89	*74.22*			80.5	
									6.8	10.6	10.0	7.1	7.67		2.21	3.53	7.38	7.92	6.83	10.65			9.2	
13									80.7	*84.9*	72.1	*73.3*	82.63		70.55	*70.99*	86.13	*87.66*	80.72	*84.87*			89.7	
									8.4	8.4	11.3	12.3	14.18		10.14	13.01	2.05	11.44	8.45	8.38			9.9	
14									89.1	*93.3*	83.4	*85.6*	96.81		80.69	*84.00*	98.18	*99.10*	89.17	*93.25*			99.6	
									11.8	9.7	15.8	5.3	11.66				14.02	5.90	12.75	9.70			9.1	
15						87.54		86.8	101.9	*103.0*	99.2	90.9	108.47				112.20	105.00	101.92	*102.95*	107		108.7	
						83.79			11.9	7.9	.9	2.4	9.91				11.40	4.00	11.76	7.85	11		17.0	
16						91.51		89.3	113.8	110.9	100.1	93.3	118.38				123.60	109.00	113.68	110.80	118		125.7	
						99.22		94.6	9.0	5.1	9.4	6.3					9.30	6.00	9.07	5.21	7		8.1	
17	131.82		131.99			96.36		97.7	122.8	116.0	109.5	99.6					132.90	115.00	122.75	116.01	125		133.8	
	1.43		2.08			101.65		100.3		—0.5	8.8	1.2					.30	5.00	.55	—.56	8.4		4.9	
18	133.25		134.07			104.30		104.3		115.5	108.3	100.8					133.20	120.00	123.30	115.45	133.4		138.7	
	2.19		1.77			106.50		106.0		—.4	3.8	—1.3					9.40	—1.70		—.37	6.3		2.0	
19	135.44		135.84			110.25		110.2		115.1	112.1	99.5					142.60	118.30		115.08	139.7		140.7	

20	2.67		2.28			114.00		112.4		3.7	-.2	1.8						1.50		2.79	1.5		1.9	
	138.11		138.12			116.20		116.1		118.8	111.9	101.3						119.80		118.87	141.2		142.6	
21	1.42		1.88			119.95		117.9			.6										-1.2		2.5	
	139.53		140.00			123.38					112.5										140		145.1	
22	1.32		1.07			125.24		123.0													1.3			
	140.85		141.07					125.6													141.3			
23	-.17		.14																		2.7			
	140.68		141.21			127.67		128.9													144			
24	1.57		1.21			131.86																		
	142.26		142.42			135.61		133.9																
25	2.78		2.70																					
	145.03		145.12																					
26	-.77		-.21																					
	144.26		144.91					141.5																
27	-.35		-.51			142.00																		
	143.91		144.40					144.8																
28	-2.78		-3.69																					
	141.13		140.71			149.28																		
29	1.55		1.97																					
	142.68		142.68																					
30	3.82		3.82																					
	146.50		146.50																					
31						159.20																		
32								156.5																

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[1] One-half year should be added to the ages given for the measurements in this column.

TABLE 34.—*Weight and increments, in pounds, according to various measurements*—Continued.

Ages in years.	168		169		170		171		172		173		174		175		176		177		178		179	
	Gilbert, 1894, New Haven (50 M., 50 F.).		Gilbert, 1897, Iowa (50 M., 50 F.).		Boas, 1897, California (1,903 M., 2,304 F.).		Boas, 1897, (2,109 M., 1,716 F.).		MacDonald,[1] Washington, D. C. (7,953 white M., 8,520 F.).		Vahl, 1884, Denmark.		Smedley, 1900, Chicago (2,788 M., 3,471 F.).		Hastings, 1902 (5,476 M.).		Hastings, 1902, Nebraska (7,700 M., 7,069 F.).		Rietz, 1903, Berlin, gymnasium (1,740 M., 533 F.).		Rietz, 1903, Berlin, gemeidschulen (1,496 M., 1,365 F.).		Hoesch Ernst, 1906, Switzerland.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	32.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	35.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	45.2	43.3	.....	39.5	.....	.....	39.29	.....	39.29	38.10	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....	.....	2.6	2.4	.....	2.1	.....	.....	3.33	.....	3.32	2.60	.....	.....	.....	.....	.....	.....
6	46.8	44.3	45.9	41.6	47.7	45.7	45.7	43.8	47.8	45.7	.....	41.6	43.52	41.61	42.62	.....	42.61	40.70	49.50	49.06	44.22	43.12	.....	.....
	4.4	6.1	5.5	5.8	4.0	3.9	4.0	4.1	3.7	3.7	.....	6.8	45.59	43.93	4.23	.....	4.25	4.84	3.96	3.08	3.30	4.40	.....	.....
7	51.2	50.4	51.4	47.4	51.7	49.6	49.7	47.9	51.5	49.4	.....	48.4	47.66	46.25	46.85	.....	46.86	45.54	53.46	52.34	47.52	47.52	.....	.....
	1.3	2.6	3.6	3.6	5.6	6.1	4.4	4.0	4.7	4.3	.....	5.2	49.72	48.57	4.05	.....	4.04	3.23	3.96	5.30	3.74	3.74	.....	.....
8	52.5	53.0	55.0	51.0	57.3	55.7	54.1	51.9	56.2	53.7	.....	53.6	52.52	50.74	50.90	.....	50.90	48.77	57.42	*57.64*	51.26	51.26	.....	.....
	7.5	5.8	6.6	7.1	4.4	4.3	5.3	6.1	5.3	4.8	.....	5.4	55.31	52.91	4.26	.....	4.25	6.01	3.74	3.52	5.28	3.08	49.65	48.71
9	60.0	58.8	61.6	58.1	62.2	60.0	59.4	58.0	61.5	58.5	.....	59.0	58.07	55.69	55,15	.....	55.15	54.78	61.16	61.16	56.54	54.34	0	.50
	8.4	3.9	2.1	4.0	6.8	6.8	6.4	6.1	4.7	5.7	.....	5.9	60.83	58.48	6.13	.....	6.12	4.97	9.46	6.16	4.18	6.16	49.65	49.21
10	68.4	62.7	63.7	62.1	69.0	66.8	65.8	64.1	66.2	*64.2*	.....	64.9	63.30	61.29	61.28	.....	61.27	59.75	70.62	67.32	60.72	60.50	2.00	3.40
	2.4	7.3	8.7	7.1	5.8	7.5	5.5	5.9	6.5	9.0	.....	9.1	65.76	64.10	3.61	.....	4.42	4.05	5.06	8.50	5.28	6.16	51.65	*52.61*
11	70.8	70.0	72.4	69.2	74.8	74.3	71.3	70.0	72.7	*73.2*	.....	74.0	68.85	67.61	64.89	.....	65.69	63.80	75.68	75.82	66.00	*66.66*	1.30	1.37
	11.5	14.5	5.8	10.5	6.8	9.9	7.1	11.0	6.7	8.6	.....	6.6	71.92	71.12	7.66	.....	6.86	8.93	13.42	8.80	6.38	9.02	52.95	*53.98*
12	82.3	*84.5*	78.2	*79.7*	81.6	*84.2*	78.4	*81.0*	79.4	*81.8*	.....	80.6	75.30	*75.79*	72.55	.....	72.55	*72.73*	89.10	83.62	72.38	*75.68*	1.69	1.13
	5.7	7.5	11.7	14.4	7.5	10.0	8.5	8.7	8.9	11.2	.....	9.2	78.68	*80.47*	5.77	.....	5.77	10.74	5.72	9.90	7.92	10.78	54.64	*55.11*
13	88.0	*92.0*	90.9	*94.1*	89.1	*94.2*	86.9	*89.7*	88.3	*93.0*	.....	89.8	83.98	*85.94*	78.32	.....	78.32	*83.47*	94.82	91.52	80.30	*86.46*	1.94	3.31
	3.7	6.0	11.1	5.8	16.0	11.6	11.3	10.9	12.6	7.4	.....	11.5	89.27	*97.41*	9.09	.....	9.08	10.95	15.52	9.90	2.20	8.36	56.58	*58.42*
14	91.7	*98.0*	102.0	99.9	105.1	*105.8*	98.2	*100.6*	100.9	100.4	.....	101.3	94.14	*97.60*	87.41	.....	87.40	*94.42*	110.34	101.42	82.50	*94.82*	.63	.75
	18.3	6.0	15.0	11.4	14.4	4.9	15.6	5.6	12.8	4.8	.....	7.3	99.02	*103.60*	15.88	.....	15.89	8.34	2.30	12.32	.....	.....	57.21	*59.17*
15	110.0	104.0	117.0	111.3	119.5	110.7	113.8	106.2	113.7	105.2	.....	108.6	105.82	*106.90*	103.29	.....	103.29	102.76	112.64	*113.74*	.....	.....	.....	.....
	17.0	9.0	13.0	.3	.....	5.8	8.8	2.5	7.5	4.8	.....	−7.7	112.63	108.79	13.09	.....	13.09	8.08	.....	10.12	.....	.....	.....	.....
16	127.0	113.0	130.0	111.6	.....	116.5	122.6	108.7	121.2	110.0	.....	100.9	117.39	111.69	116.38	.....	116.38	110.84	.....	123.86	.....	.....	.....	.....
	3.0	.7	10.1	9.4	.....	.9	10.1	5.9	10.8	1.5	.....	.....	122.15	114.58	.....	.....	8.62	.13	.....	6.16	.....	.....	.....	.....
17	130.0	113.7	140.1	121.0	.....	117.4	132.7	114.6	132.0	111.5	.....	.....	126.53	115.51	.....	.....	125.00	110.97	.....	130.02	.....	.....	.....	.....

18			2.5	4.5					.2				130.91	116.44			5.35	—.62		11.66				
			142.6	125.5					132.2				135.14	116.70			130.35	110.35		141.68				
19			2.9	.9									139.36	116.95			5.41	2.80		2.42				
			145.5	126.4													135.76	113.15		144.10				
20																	—1.36	1.84						
																	134.40	114.99						
21																								

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[1] See MacDonald, second reference.

TABLE 34.—*Weight and increments, in pounds, according to various measurements*—Continued.

Ages, in years.	180		181		182		183		184		185		186		187	
	Hoesch, Ernst, 1906, Switzerland, Volkschüler (175 M., 175 F.).		Bobbitt, 1909, Philippines (1,180 M., 428 F.).		Bobbitt, 1909, China (60).		Wisawa, 1909, Japan (9,609 M., 7,466 F.).		Wisawa, 1901, Japan (869,014).		Wisawa, 1909, Japan.		Baldwin, 1910, Chicago (460 M., 638 F.).		Weissenberg, 1911, poor.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0							6.69 13.15	6.32 12.42								
1							19.84	18.74								
2							3.97 23.81	3.07 21.82								
3							3.52 27.33	3.53 25.35								
4							2.87 30.20	3.08 28.43								
5							3.31 33.51	3.53 31.96								
6			39.69				2.86 36.37	3.31 35.27					47.0	43.6		
6½													51.0	46.8		
7			1.76 41.45	40.90			2.87 39.24	2.65 37.92	38.80	36.81			49.6	48.2		
7½													56.2	49.0		
8			3.31 44.76	3.86 44.76			2.87 42.11	3.30 41.22	3.31 42.11	4.41 41.22			57.2	51.3		
8½	54.45	52.47											60.0	55.6		
9			2.21 46.97	5.51 *50.27*	54.46		4.19 46.30	3.97 45.19	4.41 46.52	2.87 44.09			58.6	58.1		
9½	55.80	53.80											62.5	59.3		
10			3.75 50.72	.89 *51.16*	1.11 55.57		4.41 50.71	3.97 49.16	3.74 50.26	4.19 48.28			67.2	65.5	57.21	
10½	60.18	66.60											68.8	65.8		
11			6.17 56.89	7.27 *58.43*	3.97 59.54		4.41 55.12	4.63 53.79	4.86 55.12	5.73 54.01			71.1	66.8	2.29 59.50	
11½	66.14	69.00											72.7	72.5		
12			5.73 62.62	7.28 *65.71*	7.49 67.03		4.84 59.96	7.49 *61.28*	4.40 59.52	5.07 59.08			76.8	75.3	4.50 64.00	
12½	71.21	71.43											77.8	*83.0*		
13			5.96 68.58	8.16 *73.87*	7.06 74.09		5.73 65.69	7.94 *69.22*	5.29 64.81	7.28 *66.36*	83.30		86.0	*94.8*	7.06 71.06	
13½	70.81	85.96											87.0	*96.0*		

14			8.82 77.40	6.61 *80.48*	3.31 77.40		8.38 74.07	11.25 *80.47*	6.84 71.65	7.49 *73.85*	9.40 92.70		96.1	*102.6*		
14½	83.11	91.05											102.5	*103.5*		
15			13.89 91.29	7.72 88.20	22.49 99.89		11.25 85.32	3.75 84.22	5.95 77.60	6.40 *80.25*	11.70 104.40		107.5	*112.0*		
15½													108.5	*111.8*		
16			8.82 100.11	8.53 91.73					6.62 84.22	7.27 *87.58*	8.08 112.48		112.0	108.8		
16½													114.5	112.5		
17			2.53 102.64	3.97 95.70							2.89 115.37		124.7	113.2		
17½													128.5	116.5		
18			5.18 107.82	1.32 97.02									130.5	115.7		
19			5.08 112.90	−2.65 94.37												
20			.88 113.78	−.66 93.71												
21			−.66 113.12													

TABLE 34.—*Weight and increments, in pounds, according to various measurements*—Continued.

Ages, in years.	188		189		190		191		192		193		194		195	
	Weissenberg, 1911.				Goddard, 1912, Vineland, N. J.						Baldwin, 1913, Chicago and New York (100 M., 100 F.).		Baldwin, 1913, American, F. W. Parker School, Chicago (1 M., 1 F.).		Baldwin, 1913, American, Friends' School, Washington (1 M., 1 F.).	
	Middle.		Wealthy.		Moron (1,274 M., 1,410 F.).		Imbecile (3,187 M., 2,767 F.).		Idiot (1,436 M., 1,025 F.).							
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
5					39.3	42.3	38.8	38.5	35.2	33.9	38.1	37.9				
6					6.4	.6	4.5	4.9	3.9	.7	41.0	40.1				
					45.7	42.9	43.3	43.4	39.1	34.6	42.9	41.7	50.7			
7					−12.2	4.4	4.7	4.2	6.7	8.6	44.8	44.2	52.9			
					33.5	48.3	48.0	47.6	45.8	43.2	46.9	48.1				
8					22.3	7.7	4.0	4.6	5.6	5.0	51.3	50.4				
					55.8	56.0	52.0	52.2	51.4	48.2	54.2	54.7	54.5	50.7		
9					4.8	2.7	6.3	6.3	4.1	3.6	55.9	57.1	56.3	52.9		
					59.6	58.7	58.3	58.5	55.5	51.8	60.4	57.5	59.1	57.5		49.60
10					4.2	8.3	.1	6.1	2.3	3.7	62.1	61.5	60.2			54.67
	56.64		57.76		63.8	67.0	63.4	64.	57.8	55.5	66.9	64.8	63.9	61.51	62.17	56.22
11	3.52		2.38		8.3	5.3	8.8	6.2	6.4	8.8	71.4	68.4		63.00	62.83	59.52
	60.16		60.14		71.1	72.3	72.2	70.8	64.2	64.3	73.5	71.7	73.0	68.30	69.00	59.92
12	7.63		10.33		8.7	9.6	1.3	7.0	−.3	8.8	75.5	74.9	80.0	72.75	69.44	66.20
	67.79		70.47		79.8	81.9	73.5	77.8	63.9	73.1	81.0	82.8	81.5	79.80	71.65	71.65
13	5.71		6.12		8.1	2.8	10.5	10.3	10.8	6.0	84.6	91.5	86.5		76.72	78.48
	73.50		76.59		87.9	84.7	84.0	88.1	74.7	79.1	89.5	91.8		94.55	81.57	88.01
14					8.1	20.1	8.5	11.4	8.8	4.7	87.7	96.4	87.5	107.75	91.71	91.93
					96.0	104.8	92.5	99.5	83.5	83.8	94.9	102.3	101.5	113.75	100.31	97.00
15					11.7	8.7	10.3	4.7	3.9	9.9	98.9	105.8	109.5	126.50	108.25	100.53
					107.7	113.5	102.8	104.2	87.4	93.7	104.9	110.3	121.0	125.75	113.98	102.96
16					9.1	−5.6	6.4	3.5	11.2	1.3	115.9	115.3	136.0	132.25	119.27	108.03
					116.8	107.9	109.2	107.7	98.6	95.0	118.9	113.6		136.25		111.77
17					12.5	11.6	6.5	4.1	9.9	7.3	127.1	116.9		140.00		110.23
					129.3	119.5	115.7	111.8	108.5	102.3	128.5	117.9		148.00		
18					2.1	−4.1	8.5	.0	.6	−2.0	127.0	119.0				
					131.4	115.4	124.2	111.8	109.1	100.3	129.0	117.0		150.05		
19					6.2	6.0	−1.1	.7	.3	7.3						
					137.6	121.4	123.1	112.5	109.4	107.6						
20					.8	−2.1	6.4	4.6	12.6	−3.8						
					138.4	119.3	129.5	117.1	122.0	103.8						
21					.6	2.6	2.3	−4.1	2.0	8.1						
					139.0	121.9	131.8	113.0	124.0	111.9						

22					−2.2	.6	−2.0	2.0	−7.1	−2.6						
					136.8	122.5	129.8	115.0	116.9	109.3						
23					−.6	.7	−.4	−.4	3.0	1.1						
					136.2	123.2	129.4	114.6	119.0	110.4						
24					6.5	3.8	5.1	1.1	6.0	−.4						
					142.7	127.0	134.5	115.7	125.0	110.0						
25					−3.2	−5.0	.5	10.2	−9.0	−6.4						
					139.5	122.0	134.0	125.9	116.0	103.6						
26					−2.1	−7.5	2.2	−2.4	12.4	5.8						
					137.4	114.5	136.2	123.5	128.4	109.4						
27					6.0	9.5	−1.8	−7.5	−6.4	8.6						
					143.4	124.0	134.4	116.0	122.0	118.0						
28					−2.7	.4	1.8	1.5	7.0	−15.1						
					140.7	124.4	136.2	117.5	129.0	102.9						
29					−2.4	2.8	−2.8	3.1	−3.3	3.4						
					138.3	127.2	133.4	120.6	125.7	106.3						
30					−1.2	−10.2	−1.1	−5.8	−.1	14.9						
					137.1	117.0	132.3	115.9	24.6	121.2						
31					6.4	9.0	5.2	2.4	4.4	−6.2						
					143.5	126.0	137.5	118.3	129.0	115.0						

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A study of the measurements of 1,180 native Filipino boys and 438 girls between the ages of 6 and 20 years, together with a discussion of growth stages and a comparison with the Smedley and Boas norms. A comparison is also made of the growth of the Filipino children with the growth of Japanese children as given by Dr. Misawa.

Boulton, ——. Some anthropometrical observations. British medical journal (1876). p. 280–82.

A brief article of historical value, primarily for the method involved.

Bowditch, H. P. The growth of children. *In* Massachusetts. Board of health. 8th annual report. Boston, 1875. p. 273–323.

The data for this investigation were collected from 24,500 children in the public schools of Boston and near-by communities and a few private schools. A comparative study is made of the growth in height and weight and the tables are arranged in such a way that the influence on growth by nationality may be determined.

——— Growth of children. *In* Massachusetts. Board of health. 10th annual report. Boston, 1879. v. 10. p. 33–62.

This investigation is supplementary to the previous one and contains 11 tables and 11 plates. The tables give the parentage and then the occupations of parents in professional, mercantile, and unskilled labor classes.

——— The growth of children studied by Galton's percentile grades. *In* Massachusetts. Board of health. 22d annual report. Boston, 1891. v. 22. p. 479–525.

Abstract contained in American association for the advancement of physical education, 1891. v. 6, p. 36–37.

Applying this method to 24,000 Boston school children Dr. Bowditch concludes: I. The period of accelerated growth in height and weight occurs just before the age of puberty. Large children have their period of accelerated growth at an earlier age than small ones. II. The period when the girls are taller and heavier than the boys occurs earlier in the higher than in the lower percentile grades. "In other words, during the period of female superiority tall girls surpass tall boys in height less than short girls surpass short boys, while heavy girls exceed heavy boys in weight more than light girls exceed light boys."

——— The physique of women in Massachusetts. *In* Massachusetts. Board of health. Report. Boston, 1890. v. 21. p. 287–304.

——— The relation between growth and disease. *In* American medical association, Philadelphia. Transactions, 1881. v. 32. p. 370–76.

This is a valuable discussion based on the thesis that "It seems probable that the actual determination of the normal rate of growth will not only throw light upon the nature of the diseases to which childhood is subject, but will also guide us in the application of therapeutic measures."

An individual study of the rate of growth of one girl between the ages of two and three years is included, based on 26 measurements in weight with accompanying health notes from four observations, Boyd, Robett. Table of weights of the human body and internal organs in the sane and insane, etc. Phil. Trans., London, 151:241–62 (1861).

This table includes ages from before birth to 80 years and the results show that the body and internal organs arrive at full size in both sexes between twenty and thirty years of age. "The average height of the adult male varied from 67.8 to 65 inches, and of the female from 63.2 to 61.6 inches, while the mean weight of the former varied from 112.12 to 91.5 pounds, as compared with the sane adults dying at the same period of life.

Brent, W. B. On the stature and relative proportions of man at different epochs and in different countries. *In* British association for the advancement of science, September, 1844.

An abstract of paper giving measurements out of 1,000 individuals. The average height of English men is placed at 5 ft. 7½ inches.

——— Tables illustrative of the height, weight and strength of man. *In* British association for the advancement of science, 1845. v. 15. p. 80–81.

In these tables men are grouped as tall, middle height, and short. Of 100 Englishmen of all classes 4 are very tall, 6 feet 3 inches; 26 are tall, 5 feet 9 inches to 6 feet; 40 are of middle height, 5 feet 9 inches; 26 are short, 5 feet 3 inches to 5 feet 6 inches; and 4 are very short, 5 feet to 5 feet 3 inches.

Breslau, ——. Neue ergebnisse aus schädelmessung an neugeborenen. Wiener medicinische wochenschrift, 50:785–87 (1862).

Brown, C. R. Anthropometric notes on the inhabitants of Clara Island, Ireland. *In* British association for the advancement of science, 1897. v. 67. p. 510–11.

A study of the average height of 56 adult males giving an average of 66.75 in.

Brunniche, A. Ein beitrag zur beurteilung der körperentwicklung der kinder. Jahrb. für kinderkrankheiten, 47:1–28 (1866).

Bryan, E. B. Nascent stages and their pedagogical significance. Pedagogical seminary, 7:357–96 (1900).

This is one of the most important articles on physical growth from the standpoint of periods of development. The author bases his conclusions on the work of thirty-seven different writers. After outlining the periods of childhood as differentiated by Hartwell, Lange, Zeissing and others, he finds there are three periods: Infancy, childhood and youth. Each of these stages is discussed from the scientific and pedagogical points of view.

Burgerstein, Leo, *and others*. Schulhygiene. Jena, Fisher, 1902. p. 473–485.

A good summary of anthropometric work with references to American studies, including tables and curves. A short bibliography is included.

Burk, F. Growth of children in height and weight. American journal of psychology, 9:253–326.

This is the most general contribution to the subject of physical growth up to the year 1898. Most of the significant contributions previous to this are discussed and a number of tables included. Probably the most important single discussion is the series of norms derived from a comparative study of the work of Boas, Bowditch, Porter and others.

——— Influence of exercise upon growth. *In* National education association of the United States. Journal of proceedings and addresses, 1899. p. 1067–76.

A good general account of the effect of physical exercise on growth.

——— The influence of sex upon growth. American physical education review, 4:340–49 (1899).

The conclusions of this report emphasize the fact that exercise should follow racial habit as far as possible.

Camerer, W. Bermerkungen über wachstum. Zsch. für biologie (1880). p. 24–28.

A short, detailed study of infant growth which was reprinted in the article which follows.

——— Untersuchungen über massenwachstum und langenwachstum. Jahrb. für kinderheilkunde, 36:249–93 (1893).

Carmon, W. B. Causes of some rapid changes in body weight. Journal of the American medical association, 59:725–71 (1912).

A brief discussion of theoretical value.

Cattell, J., *and* Farrand, L. Physical and mental measurements of the students of Columbia university. Psychological review, 3:618–48 (1896).

A detailed and important study of mental tests and physical characteristics with some suggestions on anthropometric measurements.

Chaille, S. E. Infants: their chronological progress. New Orleans medical and surgical journal, 14:893–912 (1886–87).

This report contains a few measurements and many suggestions for observation.

Chamberlain, A. F. The child. New York, Scribner, 1900. p. 51–106.

A general discussion of the problem of physical growth from the anthropological and educational standpoints.

Christopher, W. S. Measurements of Chicago children. Journal of the American medical association, Chicago, 35:618–23; 683–87.

This is a detailed illustrated report of the work done at Chicago by Smedley, Campbell, McMillan, and others in the Chicago public schools. The charts and graphs are included in the report of Mr. Smedley, which is noted further along in this bibliography.

In the second part of this report Dr. Christopher says: "As a result of his examination of 33,500 school children in St. Louis, in 1892, Dr. W. Townsend Porter concluded that there is a physical basis of precocity; that dull children are lighter and precocious children heavier than the average child; that mediocrity of mind is associated with mediocrity of physique At the outset of my investigations I determined to reinvestigate Porter's proposition, and have to say that such facts as we have been able to collect go to confirm it."

Combe, J. Körperlänge und wachstum der volksschulkinder in Lausanne. Zsch. für schulgesundheitspflege, 9:569–89 (1896).

During the seven years of Dr. Combe's investigation 2,000 children were measured, giving a sum total of 13,358 measurements. The value of individual measurements is discussed, and also the relation of disease to growth in height at different ages with reference to time of birth in the year, and to parentage.

Cordeira, F. J. B. A contribution to anthropometry. New York medical journal, 45:484–87 (1887).

An illustrated article showing the method of computing height and weight curves, with a number of conclusions and criticisms bearing on the work of other investigators, together with some data on the average maximum and minimum measurements for height, weight, chest, and chest expansion between the ages of 14 and 18 for sailors on the *Minnesota*.

Crampton, C. W. Anatomical or physiological age: *versus* chronological age. Pedagogical seminary, 15:230–37 (1908).

A general discussion of the previous work done in this field by the writer and a recommendation that "All observations, records, and investigations of children, whether pedagogical or medical, social or ethical, must regard physiological age as a primary and fundamental basis."

——— Influence of physical age on scholarship. Psychological clinic, 1:115–20 (1908).

In this article Dr. Crampton discusses the relation of physiological age, as determined by pubescence and height, to scholarship. The tables are confined to boys (?) between the ages of 12 and 17 years. The conclusions are that "Earlier pubescence favors good scholarship; later pubescence poor scholarship."

——— Physiological age. American physical education review, 13:144–54; 214–27; 268–83; 345–58.

The best study so far made on the age of puberty of boys. The age at which this usually takes place is from 13.5 to 14.5. "Individuals differ from each other in weight (and height) according to their maturity." There is, according to these results, no marked primary relation between scholarship and weight, height, strength, etc.

Crichton-Browne, *Sir* J. Growth—somatic and cerebral. Child study, 4:77–91 (1911).

A good general discussion without detailed anthropometric measurements.

Daffner, F. Über grösse, gewicht, kopf und brustumfang beim männlichen individuum vom 13 bis 22 lebensjahre. Archiv für anthrop. (beilage), 15:121–26 (1884).

Supplementary to the following study but confined to males and including chest circumference. A small number of individuals is included; each year from 13 to 22 are taken up separately.

——— Vergleichende untersuchungen über die entwicklung der körpergrösse und kopfumfanges. Archiv für anthrop., 15:37–44 (1884).

A good discussion of the subject, including many tables.

——— Das wachstum des menschen. Anthropologische studien. Leipzig, W. Englemann, 1902. 475 p.

A good study of growth of different parts of the body, starting with the embryo and including puberty.

Data on measurements of 6,000 California school children as to weight and measurement. *In* Oakland, Cal. School report, 1892–93.

See Barnes.

Debusk, B. W. Height, weight, vital capacity, and retardation. Pedagogical seminary, 20:89–92 (1913).

A brief preliminary study of physical development.

Dickson, S. H. Some additional statistics of height and weight. Charleston medical journal and review, 13:494–506 (1858).

In this report a comparison is made between the heights and weights of Americans of different nationalities with the stature and weight of Europeans. Results are based on students of the Medical college of South Carolina, the University of Louisiana, the University of Tennessee, Jefferson college, Virginia military institute, the Military academy at West Point, and the University of Michigan. Conclusions show that Europeans increase more in weight than Americans as they grow older. The Americans have on the average greater height.

——— Statistics of height and weight in the South. Charleston medical journal and review, 12:607–13 (1857).

Dr. Dickson has collected in this report some detailed statistics in regard to the average height and weight of Southern men. A careful study is made of the different nationalities, of students and recruits with the conclusion that on the average men from the Atlantic Southern States are not so tall as those from Kentucky, Tennessee, and Virginia, although the two tallest men in the army in 1857 were from Georgia and South Carolina respectively.

——— Statistics of height and weight. American journal of medical sciences, Philadelphia (1866). 52:373–380.

This report shows that the new American race, which is growing out of an almost unlimited mixture of other races, exhibits thus far no deterioration, but compares favorably with all the races of the Old World in every point of physical development. The whole number of individuals (286 young men from Jefferson college) average 24 years of age, 5 feet 9½ inches in height, and 147 pounds in weight. Kentuckians were the tallest people, who average 5 feet 11 inches, one being 6 feet 6 inches.

Diek, ——. Materali k izsledovaniyi roste, viesa, okruzhnosti grundi i zhiznennoo yomkosti lishkickh detskavo i yunosheek. Voyenno-med. journal, St. Petersburg, 146:223–363 (1883).

A report of the stature, weight, and vital capacity of children in Russia. An inaugural dissertation given in St. Petersburg, cited by Sack.

Donaldson, H. H. A comparison of the white rat with man in respect to the growth of the entire body. Lancaster, Pa., New Era co., 1906. p. 26.

Reprinted.

A very important comparison between the growth in body-weight of the rat for 365 days, and of man from birth to 23 years of age, the latter being based on Robert's tables. The conclusions reached are that "the increase in body weight of the man and the white rat between conception and maturity exhibit similar phases, five in number." The growth of the female in relation to that of the male is similar in both forms, as are also the relative weights of the two sexes at maturity.

——— Growth of the brain. London, 1896. 369 pp.

Chapters 2 and 3 are very good on the general problem of physical growth.

Drummond, W. B. Introduction to child study. London, 1907. p. 93–138.

A general treatment of growth for the first four years; quotes Holt extensively.

Dudrewicz, L. Pomiary antropolog. dzieci Warszawskich. Zboir. wiad. do antrop. . . . Akad. Umiej. w Krakow, 6:3–23 (1882).

Anthropological measurements of children in Warsaw.

Dun, W. A. The police standard of Cincinnati; with some statistics compiled from the first thousand examinations of applicants. Lancet-clinic, Cincinnati, O., 18:131–35, 767–76 (1887).

Contains many valuable tables for comparative study on minimum height and weight requirements.

Elliott, E. B. On the military statistics of the United States of America. U. S. Sanitary commission, Berlin, 1863. v. 4. p. 44.

Reprinted.

A comparative study of the heights, weights, etc., of Soldiers in the Army of the Potomac.

Ellis, H. Man and woman. London, 1896. p. 31–114.

Also published by Scribner, New York, 1904. p. 32–54.

In chapter 3 of this book there is a good discussion of the growth and proportions of the body. A number of references are given and four charts from Key showing the relative increments of growth in height and weight from 7 to 20 years of age. The relative proportions of different parts of the body of man and woman are compared.

Elson, J. C. Statistics regarding short-course students. American physical education review, 15:348–49 (1910).

A brief article which shows that in a study of 8,000 college students the short course men (men who are taking special courses in agriculture) surpass in all measurements, except height, the men of the present freshmen class.

Enebuske, C. J. Some measurable results of Swedish pedagogical gymnastics. *In* American association for the advancement of physical education, 1892. v. 7. p. 207–55.

A report of observations made by M. Aura Wood on 26 students of the Boston Normal school of gymnastics. Eight tables are included and a plea is made for casuistic study in place of isolated statistical measurements.

Engelsperger, A., *and* Ziegler, O. Beiträge zur kenntnis der physischen natur des sechsjährigen in die schule eintretenden kindes. Anthropometrisches teil. Epd. 1: 173–235 (1905).

Erismann, F. Schulhygiene auf der jubilaumsausstellung der gesellschaft für beforderung der arbeitsamkeit in Moskau. Zsch. für schulgesundheitspflege, 1:367–73; 393–419 (1888).

The latter part of this report gives comparative tables with discussions on the height and weight of about 3,000 boys and 1,500 girls in the schools of the city of Moscow, and 4,300 boys and 700 girls in the nearby village schools.

——— Untersuchungen über die körperliche entwicklung der arbeiterbevölkerung in Zentralrussland. Tübingen, 1889.

Reprinted from Archiv für soziale gesetzgebung und statistik.

The latter part of this report deals primarily with hygiene and gives the results of the measurements of 24,288 boys and 16,032 girls ranging from 7 to 18 years, taken from city schools, village schools, and factories.

——— Untersuchungen über die körperliche entwicklung der fabrikarbeiter in Zentralrussland (1888).

Manuscript.

Ernst, L. H., *and* Meumann, E. Das schulkind in seiner körperlichen und geistigen entwicklung. Leipzig, Otto Nemnich, 1906. p. 143.

This book contains a fairly complete summary of the previous investigations upon physical growth and development, and a series of charts which gives the growth curves as found by the different investigators. The author's own work consists in an extensive study of something over 300 Munich children, with regard not only to height and weight but also lung capacity, span, and various girths. These figures are presented in detailed tables and the author's conclusions are compared with those of previous investigators.

Farr, W. Table showing the relative stature of boys at the age 11 to 12, under different conditions of life. *In* British association for the advancement of science, 1880. v. 1. p. 128–59.

A report of the committee of the Association, appointed originally in 1875, for the purpose of continuing the collection of observations on the systematic examination of heights, weights, etc., of the human frame in the British Empire, and the publication of photographs of the typical races of the Empire. In 1879, 46 different classes of subjects were included, giving a sum total of 11,745 individuals, while in the 1880 study one class of subjects was included, or 11,956 individuals. There are several excellent distribution tables giving the mean measurements for boys and men between 10 and 50 years, there being in all three charts (plates) and 27 tables. This is a valuable and suggestive report.

Fergus, W., *and* Rodwell, G. F. On a series of measurements for statistical purposes, recently made at Marlborough college. Journal of Anthropological institute of Great Britain and Ireland, London, 5:126–30 (1874).

A short study of the college student.

Fleischmann, L. Über ernährung und körperwägungen der neugeborenen und säuglinge. Wien, 1877. 48p.

Reprint from Wien-klinik.

A very good study of infancy.

Forbes, H. O. On the Kubers of Sumatra. Journal of the Anthropological institute, 14:121–128 (1884–85).

A careful study of 12 Kubers from the central part of Sumatra, including detailed measurements.

Foster, A. B. Report of director of physical training. American physical education review, 3:44–53 (1898).

Reprinted from the annual report of the president of Bryn Mawr college, containing measurements on freshmen, sophomores, juniors, and seniors, and discussing various kinds of physical exercise.

Foster, W. L. Physiological age as a basis for classification of pupils entering high schools, and relation of pubescence to height. Psychological clinic, 4:83–88 (1910–11).

A study of the physiological age of 459 boys with the conclusions that there is a close relationship between height and pubescence, and that a classification of high-school students according to physiological age, based upon pubescence, is easy and practical.

French, M. S. Report of the physical examination of men upon the police force of Philadelphia, and those who were applicants for appointment. Philadelphia, 1885.

Galton, F. An anthropometrical laboratory. Journal of the Anthropological institute, 14:205–21 (1884–85).

A description of the anthropometrical laboratory, which aimed to show to the public the simplicity of the instruments and methods by which the chief physical characteristics may be measured and recorded.

——— Anthropometric percentiles. Nature, 31: 223 (1884–85).

In this article Dr. Galton gives a percentile table of the persons measured in the anthropometric laboratory at the late international health exhibit. The table is given primarily as a sample of the statistical method, and secondarily for its intrinsic value. There were in all 9,337 persons measured between the ages of 23 and 50.

——— Family likeness in stature. Royal society. Proceedings. London, 1886. v. 40. p. 42–73.

A detailed statistical study showing the correlation between the probable stature of a child when the statures of several of his kinsmen are known. The Appendix by Dr. Dixon gives eight tables showing the relation of the adult children to the mid-parents.

——— Hereditary stature. Journal of the Anthropological institute of Great Britain and Ireland, 14:488–99 (1885–86).

——— On the height and weight of boys, aged 14 years, in town and county public schools. Journal of the Anthropological institute of Great Britain and Ireland, London, 5:174–80 (1815–16).

Comparisons are made between 509 city boys, 296 country boys and others ranging from 10 to 17 years of age; it is found that the country boys are about 1¼ inches taller and 7 pounds heavier than the city boys.

——— Range in the height of males at each age and in several classes. British association for the advancement of science. Report, 1881. v. 51. p. 250–54.

——— Report of the Anthropometric committee. *In* British association for the advancement of science, 1883.

This is the final report of the committee appointed in 1875 and includes valuable data on the growth of boys and girls at birth and during subsequent ages, including adult life. While this report deals with adults primarily, the height and weight at birth of 451 boys and 466 girls are included.

——— Some results of the anthropometrical laboratory. Journal of the Anthropological institute, 14:275–88 (1884–85).

The results of measurements on 9,337 persons, 4,726 adult males and 1,657 adult females. Percentile tables are given.

——— Useful anthropometry. *In* American association for the advancement of physical education, 6:51–57 (1891).

A discussion on the means of investigating the best method of assigning marks for physical efficiency based on anthropometric tests. A study of 2,000 students at Cambridge revealed conclusively, according to Dr. Galton's observations, that success in the literary examinations is in no manner connected with stature, weight, strength, or breathing capacity, and but slightly with keenness of eyesight.

Ganjoux, ———. Annales de médecine et chirurgie. Paris, 1910. p. 725–60.

Garson, ———. Report of the committee appointed for the purpose of calculating the anthropological measurements taken at the Newcastle meeting of the association in 1889. *In* British association for the advancement of science. Report. London, 1890. v. 60. p. 549–52.

Geissler, A. Messungen von schulkindern in Gholis-Leipzig. Zsch. für schulgesundheitspflege, 5:249–53 (1892).

A supplementary consideration of the greater height of the favored classes, based on new data which consists of the measurements of 2,806 children at the end of the summer vacation in 1889.

Geissler, A., *and* Uhlitzsch, R. Die grössenverhältnisse der schulkinder in schulinspektionsbezirk Freiburg. Zsch. des königlichen sächsischen statistischen bureaus, 34:28–40 (1888).

This investigation was begun in 1866 for the purpose of fitting school desks, and is a comparative study of the boys and girls of the Freiburg burger schulen and of those of the peasant classes in nearby communities. 21,173 children were in the schools, ranging from 6½ to 14½ years of age. A critical study of the arithmetical average is included.

Gihon, A. L. A study of adolescent growth based on the physical examination of 6,129 naval cadets and candidates for appointments as cadets and 2,058 naval apprentices. Report of the Surgeon-general, U. S. Navy. Washington, 1880. p. 15–44.

Gilbert, J. A. Researches on school children and college students. University of Iowa studies in psychology, 1897. v. 1. p. 1–39.

Supplementary to the previous investigation with extra data, especially on dullness and precocity. The curves for height, weight and lung capacity and for dullness and precocity are included. Tests on various mental traits are included.

——— Researches on the mental and physical development of school children. Studies from Yale psychological laboratory. v. 2. p. 40–100.

The curves charted consist of those of the growth of boys and girls; of each sex separately; the mean variation for both sexes, then each sex separately.

Girond, Gabriel. Observations sur le development de l'enfant. Petit guide anthropométrie familiale et scolaire. Paris, Schleicher frères, 1902. 53 p. and tables.

A small guide for the physical observations of children, with a few statistics on growth in weight.

Goddard, H. H. The height and weight of feeble-minded children in American institutions. Journal of mental and nervous diseases, 39:217–235 (1912).

The most comprehensive study, so far published, on the growth, height and weight of feeble-minded children. Four tables and seven charts are included and the data are derived from twenty institutions. Some of the conclusions are that all defectives are heavier at birth than normals; sex differences are less marked as we go down the grades; with the morons there is an arrest of growth earlier than with normals; there is close correlation between physical growth and mental activity.

Gould, B. A. Investigations in the military and anthropological statistics of American soldiers. U. S. Sanitary commission, N. Y., 1869. v. 2. 655 p.

Gratsianoff, ———. Materials for the investigation of physical development in childhood and youth in relation to heredity and to progress in school work. From observations made in Arzamas, province of Novgorod. Inaugural dissertation. St. Petersburg, 1889.

An important study not accessible to the author.

Graupner, ———. Wachstumgesetze der körperlänge nach untersuchung von 57,000 Dresdner schulkinder. Bericht des ersten Internationalen kongresses für schulhygiene, 1904. p. 421–25.

Gray, F. J. Diurnal variations in weight. American physical education review, 15:6–14 (1910).

A thesis presented for bachelor's degree in physical education at the International Y. M. C. A. training school, in June, 1908. After making comparisons with the work of M. A. Burke, H. Carrell, H. Cook, B. B. Forte, C. H. Goodwin, A. Gould, and others, the writer finds that all men gain "during the season." Seasoned athletes gained less during a season of training than green athletes.

Greenleaf, ———. New table of physical proportions. Baltimore underwriter, 43:303 (1890).

A study of the relative proportions of the body.

Greenwood, J. M. Heights and weights of children. *In* Kansas City. Board of education. Report, 1890–91.

See also American public health association. Report, 1892. v. 17. p. 199–204.

The chief value of this study consists in the number of measurements included.

Gregor, W. Galloway folk in Wightshire and Kirkendbrightshire. *In* British association for the advancement of science, 1897. v. 67. p. 500–3.

A comparative study of the heights of 82 men and 34 women, the height for the men averaging 68.26 inches, for the women 63 inches.

Grinevski, A. On the physical development of children. Kvoprosu o fizicheskom vospitanii dietei. Odessa, 1892. 36 p.

Grünbaum, O. F. F. On the physical characteristics of the inhabitants of Barrington and Foxton in Cambridgeshire. *In* British association for the advancement of science, 1897. v. 67. p. 505.

A comparative table showing the height of 23 males varying from 153.3 cm to 174.4 cm.

Gulick, L. Physical measurements and how they are studied. Physical education, 2:140–41; 152–53; 186–91 (1893).

A series of practical suggestions on how to make, record, and study physical measurements.

——— The value of percentile grades. *In* American statistical association (quarterly) 21:321–31 (1893).

A detailed discussion of the theoretical significance and the percentile method of using data.

Haddon, A. C. On the physical characteristics of the inhabitants of Barley, Herts. *In* British association for the advancement of science. Report, 1897. v. 67. p. 504–5.

A number of measurements are included in this report on the observations of 15 males from Barley.

Hall, G. S. Growth in height and weight. *In his* Adolescence. New York, D. Appleton & co., 1904. v. 1. p. 1–50.

The best summary without direct experimental data, up to date, of the problem in height and weight. The work of Boas, Burk, and Wiener is especially emphasized and the more general and interrelated problems of development are treated in a very scholarly and helpful manner.

Hall, W. S. Changes in the proportions of the human body during the period of growth. Journal of the Anthropological institute of Great Britain and Ireland, 25:21–46 (1895).

A study in growth in height of boys in Friends' schools and Haverford college ranging from 9 to 23 years of age. Many other measurements are included and some conclusions in regard to strength. There was a great homogeneity of race, nationality, and social conditions among the individuals in these schools.

Hanna, D. Anthropometric tables compiled from the measurements of 1,600 women (Oberlin students). Oberlin college. Dept. of physical training. Oberlin, O., 1893.

An elaborate series of tables showing many comparative measurements.

Hansen, S. Über die individuellen variation der körperproportionen. Archiv für anthrop., 20:321–23 (1891–92).

This investigation is based on 2,883 cases and gives the results, in tabular and graphic form, of the relation of the length of the foot to the height of the body.

Harrington, T. F. Health and education. American physical education review, 15:373–88 (1910).

Contains, after a discussion on health and ventilation, a study of the weight of 763 boys and 653 girls born in Boston, whose parents were born in Boston and attended the same schools from which Dr. Bowditch secured his measurements in 1876. At the present stage of this investigation the boys are slightly lighter than those of 1876, except at 13 years of age, and the girls are heavier.

Hartwell, E. M. Bowditch's law of growth and what it teaches. *In* American association for the advancement of physical education, 1896. p. 23–30.

Bowditch's law of growth is as follows: "There is a prepubertal acceleration of growth in height and weight, both in males and females, followed by a postpubertal retardation in such growth; and girls when growing most rapidly, exceed boys of like age, in height and weight." It has been thought that Bowditch was the first to note this, but it was previously noted by Dr. Fahrner, who measured 1,789 children for desks.

——— Preliminary report on anthropometry in the United States with provisional list of works relating to anthropometry in the United States. *In* American statistical association. Boston, 1893. v. 3. p. 554–68.

A summary and bibliography of the work in anthropometry in this country.

——— Reports on physical training in Boston public schools. *In* Boston, Mass. School report, 1894–95. p. 181–260.

A careful study of the relation of stature to school work.

Hasse, E. Beiträge zur geschichte und statistik des volksschulwesens von Gohlis Leipzig, Dunker und Humbolt, 1891.

Reprinted from the Report of the city of Leipzig, 1889.

Hastings, W. W. Anthropometric studies in Nebraska. American physical education review, 5:53–66 (1900).

Also in National education association of the United States. Journal of proceedings and addresses, 1899. p. 1076–84.

In this investigation 15 measurements were made on 2,500 public-school children of Nebraska. Conclusions are given as to comparative weights of boys and girls, physical well being and mental efficiency, height and nationality. Tables are given showing average height and weight, for boys and girls, for different ages and different grades.

——— Brief résumé of Quetelet's treatise on man. American physical education review, 3:258–69; 309–18; 366–76 (1898).

A good summary of this book, which is anthropological rather than anthropometrical in its content.

——— Health and growth of school children. *In* National education association of the United States. Journal of proceedings and addresses, 1903. p. 769–75.

A summary which first takes up the methods of ascertaining the normal periodic increase of growth, and secondly, the practical methods of comparing the individual child with this known standard.

——— A manual for physical measurements. New York, Macmillan co., 1902. 112 p.

The best summary from an anthropometrical standpoint so far published. A large amount of comparative material has been included and many practical suggestions given. A good bibliography is appended.

Hergel, G. Was ist auf dem gebiete der körperlichen ausbildung unserer mittelschuljugend erreichbar? Zsch. für schulgesundheitspflege, 10:333–34 (1897).

A brief discussion leading to other papers on physical training.

Hertel, A. Neuere untersuchungen über den allegemeinen gesundheitszustand der schüler und schülerinnen. Zsch. für schulgesundheitspflege, 1:167–83; 201–15 (1888).

A comparison is made between age, height, and diseases of children between the ages of 6 and 17 as shown by Hertel's report, a report of the Danish commission and a report of the Swedish commission. The emphasis in the article is placed on the relation of disease to physiological growth.

——— Overpressure in high schools of Denmark. Tr. by Godfrey Sorenson. New York, Macmillan co., 1885.

This is an English translation of Hertel's book which discusses the question of growth and prevalence of chronic diseases among children of different ages.

——— The report of the Danish commission. (1882.)

This report takes up age, length of work, time at home and school, height, weight, and the common diseases, and a comparison is made between the pupils in the higher and the volkschulen. 17,595 boys and 11,646 girls were included, both in Copenhagen and in the country.

Hess, W. Bestimmung des gewichtes und messungen der körperlänge bei einem kinde im ersten und zweiten lebensjahre. Archiv für gynaekologie, Berlin, 17:150–52 (1881).

Hitchcock, E. (a) Anthropometrical data based upon nearly 3,000 measurements taken from students. Amherst, 1888.

Included in program of exhibition of physical exercises (a, b, c, d, e).

——— (b) Average and mean anthropometric data of Amherst college students. Amherst, 1888.

A series of elaborate tables.

——— (c) The gain in physical strength of college students. Amherst, 1892. Two tables.

——— (d) Physical growth of Amherst students. Gain between freshman and senior years. Amherst, 1892.

——— (e) The distribution of physical measurements shown in the different years of college life. Amherst, 1892.

——— Anthropometric statistics of the students of Amherst college. *In* American statistical association. (Quarterly publications) Boston, 1893. v. 3. p. 588–99.

A summary of the statistical work of the department of physical education.

Hitchcock, E. Comparative study of measurements of male and female students at Amherst, Mt. Holyoke and Wellesley colleges. *In* American association for the advancement of physical education, 1891. v. 6. p. 37–42.

A discussion of Dr. Bowditch's paper on percentile grades, accompanied by three tables. The first table gives the average measurements of 2,000 students; the second, the means rather than the averages for 2,086 students; and the third, the average measurements of 326 college men between 21 and 22 years of age.

——— The need of anthropometry. *In* American association for the advancement of physical education, 1887. v. 3. p. 3–8.

A discussion of the history of anthropometry, together with suggestions on how to take measurements accurately.

——— Physical measurements, fallacies and errors. *In* American association for the advancement of physical education, 1887. v. 3. p. 35–42.

Dr. Hitchcock reaches the conclusion in this discussion that "human measures increase with height, always understanding that the law will not include some of the tests of strength." A criticism of the Hemenway charts is also included.

——— The result of anthropometry as derived from the measurements of the students in Amherst college. Amherst, Mass., Carpenter & Morehouse, 1892. 7 p.

Contains several reports.

——— A synoptic exhibit of 15,000 physical examinations. *In* American association for the advancement of physical education, 1890. v. 5.

——— Seeley, H. H., *and* Phillips. The anthropometrical manual of Amherst college. Amherst, Mass., Carpenter & Morehouse, 1900. 40 p.

Holmes, B. Order of physical growth of the child. *In* Illinois society for child study. Transactions, 1897. v. 11. p. 201–15.

This article deals primarily with the influences affecting growth and gives two of Porter's tables.

———A study of the growth of children, being a review of the work of Dr. Wm. T. Porter of St. Louis. New York medical journal, 60:417–23 (1894).

A critical discussion of Dr. Porter's work.

Hrdlička, A. Anthropological investigations on 1,000 white and colored children of both sexes. *In* New York juvenile asylum. 47th annual report. New York, Hollenbeck Crawford co., state printers, 1899. v. 47. p. 1–86.

The author finds these children slightly inferior to healthy children from good homes but attributes it to neglect and improper nutrition. The report contains the results of much painstaking anthropometrical research and a discussion on the stigmata of degeneration.

Hudson, G. H. A plea for a more general recognition of phenomena of child growth in education. Education, 14:466–77.

A general discussion in growth without empirical data or measurements, emphasizing the recapitulation theory.

Hurd, K. C. On anthropometry. Times and register, N. Y. and Phila., 7:506–11 (1890).

This article takes up the question of the method and value of anthropometry and gives the data used in Galton's Anthropometric laboratory. The author begins by making a plea for compulsory anthropometry in our schools.

——— Some of the Francis Galton tests concerning the origin of the human faculty. *In* American association for the advancement of physical education, 1891. v. 6. p. 80–96.

An application of Galton's measurements to Bryn Mawr schools and Bryn Mawr college, including some anthropometric measurements.

Hutchinson, John. Contributions to vital statistics obtained by means of pneumatic apparatus for valuing the respiratory powers in relation to health. Quarterly journal of the statistical society, London, 7:193–212 (1844).

Included on account of the statistics and for the historical value.

——— On the capacity of the lungs and on the respiratory functions, etc. Medical chirurgical transactions, London, 29:137–252 (1846).

A very good pioneer study in lung capacity.

Jackson, W. A., *jr*. Graphic methods in anthropometry. Physical education, 2:89–94 (1893).

Diagrammatic charts on physical growth and proportions of different parts of the body.

Jackson, W. A., *jr.* Tables of the anthropometric measurements of the Williston seminary students. The Willistonian, Easthampton, Mass. (1892). p. 140.

Karnitsky, A. C. Zur physiologie des wachstums und der entwicklung des kindlichen organismus. Jahrbuch für kinderheilkunde, 68:462–74 (1908).

Karstädt, F. Über das wachstum der knaben vom 6. bis 16. lebensjahre. Zsch. für schulgesundheitspflege, 1:69–74 (1888).

The growth of boys in height furnishes the object of this study. It is based on 4,274 semiannual measurements over the years from 6 to 16 (not consecutive measurements on the same individual). Maximum and minimum heights and increments are given. The measurements were taken in the Höhren burgerschule I in Breslau.

Kellogg, J. H. Outline studies of the human figure, comprising 118 figures which embody the results of several thousand observations, embracing studies of a number of different civilized and uncivilized races. Chicago, Battle Creek, Mich. [etc.], Mod. med. pub. co., 1893.

——— The value of strength tests in the prescription of exercise, and a comparative study of the strength of individual groups of muscles, and of homologous muscles of men and women. *In* American association for the advancement of physical education, 1896. p. 49–75.

The value of strength tests in the prescription of exercise, and a comparable study of the strength of individual groups of muscles and of homologous muscles, in men and women, are given in this report. Many physical measurements of different parts of the body are included.

Key, Axel. Läroverkskomiténs betänkande, III. Bilage E. Kongl. boktrycheriet. Stockholm, 1885. 2 v.

Edited in German by Bürgerstein. Schulhygienische untersuchungen, Hamburg, 1889.

A report of the Swedish commission of which Key was appointed chairman in 1882. About 15,000 boys and 3,000 girls were examined. Most of the book is concerned with hygienic investigations and an important contribution is made bearing on the relation of disease to nodes of growth. The study of the height and weight extends from the age of 6 to 20 years.

——— Die pubertätsentwicklung und das verhältnis derselben zu den krankheitserscheinungen der schuljugend.

Reprinted from the proceedings of the 10th International congress of medicine, 1890. v. 1. p. 66–130.

——— Schulhygienische untersuchungen. Leipzig und Hamburg, L. Bürgerstein, 1889. 346 p.

Key found in Sweden that liability to sickness decreases with increasing rate of growth, and increases with decreasing rate of growth; therefore one may be taken as the measure of the other.

King, I. Measurements of the physical development of two children. Journal of educational psychology, 1:279–86 (1910).

An important individual study of the author's two boys, one between the ages of birth and 6 years, and the other for the first three years. Fourteen measurements besides height and weight are included.

Kirchhoff, A. Zur statistik der körpergrösse in dem Saalkreise zu Halle und dem Mansfelder Seekreise. Archiv. für anthrop., Braunschweig, 21:133–43 (1892–93).

In this investigation, which was carried on in 1882, Dr. Kirchhoff makes some very interesting comparisons. 2,637 measurements were made in the Saalkreise and 2,812 on the Seekreise.

In a distribution chart arranged on Eisenben the proportion was 1,520 millimeters to 1,880 millimeters as compared with 1,520 to 1,765 on Köennern.

Kirkpatrick, E. A. Physical growth and development. (Fundamentals of child study.) New York and London, Macmillan co., 1907. p. 15–30.

A brief but suggestive discussion on the general problem of growth.

Kosmowski, W. Über gewicht und wuchs der kinder der armen in Warschau. Jahrbuch für kinderheilkunde, 39:70–76 (1895).

Kottelman, L. Die körperverhältnisse der gelehrtenschüler des Johannaeus in Hamburg. Zsch. des königlichen preussichen statistischen bureaus, Berlin (1879).

An important investigation based on measurements in height, weight, and lung capacity of 115 boys from 10 to 15 years of age.

Landsberger, ——. Das wachstum der knaben vom 6. bis zum 13. lebensjahre. Zsch. für schulgesundheitspflege, 1:65–69 (1888).

See Karstädt.

An important investigation based on consecutive measurements of 37 children between the ages of 6 and 13. Many other measurements are included and a comparison is made with the work of Bowditch and other investigators.

Landsberger, ——. Das wachstum im alter der schulpflicht. Archiv für anthrop., Braunschweig, 17:229–64 (1888).

A report of the growth of 104 children through a period of five years.

Lane, W. A. Some of the laws which influence the growth of children. *In* International congress of hygiene. Proceedings. London, 1892. p. 103–9.

A general discussion.

Lange, E. Die gesetzmässigheit im langenwachstum des menschen. Jahrb. der kinderheilkunde, 57:261–324 (1903).

Lee, A., *and* P. K. Data for the problem of evolution of man. *In* Royal society. Phil. transactions. London, 1901. v. 196. p. 225–64. Series A.

A good treatment of the general problem of physical development.

Lee, C. A. A table showing the physical characteristics of the United States Senate. Buffalo medical and surgical journal, 6:390–96 (1866–67).

Leshaft, ——. Materials for the study of the years of school life. Health (1879–80). p. 127–31.

Russian, cited by Sack.

Liharzik, F. Der bau und das wachstum der menschen. Sitzungsberichte d. königlichen akademie in Wien. Mathematisch-naturwissenschaftliche klasse, abtheilung, 2:44 (1861).

——— Das gesetz des menschlichen wachstums. Wien, Carl Gerolds sohn, 1858. 188, cxvi.

A good pioneer study of measurements of the head and chest.

Lincoln, D. F. Anthropometry individualized. *In* American association for the advancement of physical education, 1896. p. 4–11.

A practical paper with some very good observations on sexual maturity.

Macdonald, Arthur. Experimental study of children. *In* U. S. Bureau of education. Report of the Commissioner for the year 1897–98. v. 1. p. 989–1204. v. 2. p. 1281–1390.

An extensive study of numerous physical and mental measurements of white and colored children in Washington. A number of comparisons of head measurements are made, and it is concluded that white girls have a greater standing height and sitting height than colored girls, but colored children have a greater weight than white children. Children of the laboring class are superior in height, sitting height, and weight to those of the nonlaboring class, which confirms the results of Roberts, Bowditch, and Baxter. Girls are superior to boys in their studies. Children with abnormalities are inferior in height, weight, and the other measurements included.

Many charts, tables, and illustrations are given, and a bibliography is appended.

——— Neuere amerikanische arbeiten auf dem gebiete der kinderforschung. Zsch. für pädagogische psychologie, 2:112–21 (1900).

——— Über körpermessungen an kinder. Deutsche zsch. für ausländisches unterrichtswesen, 4:253–66 (1899).

A translation of the previous article.

Malling-Hansen, P. R. Einige resultate der täglichen wägungen von 130 zöglingen des königlichen taubstummeninstituts in Kopenhagen. *In* Congrès périodique international des sciences médicales, Kopenhagen. v. 3. p. 103–19.

This is an address covering the subject of seasonal variations, and a consideration of the effect of change of diet on growth in weight at different times of the year.

——— Perioden im gewicht der kinder und in der sonnenwarme beobachtungen. Kopenhagen, 1886. Fr. 3. p. 268.

——— Uber periodicität im gewicht der kinder an täglichen wägungen. Kopenhagen, 1883. v. 1. p. 35.

An extensive and careful treatment of the seasonal period of growth.

——— Uber periodizität im gewicht der kinder. Kopenhagen, 1883. 35 p.

Deals primarily with the seasonal and daily variations in growth due to climatic conditions.

Meek, K. Volummessungen des menschlichen körpers und seiner einzelnen theile in den verschiedenen alterstufen. Zsch. für biologie, Munchen und Leipzig, 31:125–47 (1894).

Mereshoffsky, K. On the results and methods of the investigation of the physical development of children.

Brochure. Russian, cited by Sack. Not accessible to the writer.

Meuman, E. Vorlesung zur einführung in die experimentelle pädagogik. Leipzig, Engelmann, 1911. 725 p.

The third chapter of this book contains a very valuable chapter on growth. A bibliography is appended.

Michailoff, ———. Materials for the estimation of physical development and disease in the village school of Russik in the province of Moscow. Moscow, 1887.

Russian, cited by Sack. Not accessible to the writer.

Misawa, Tadasu. A few statistical facts from Japan. Pedagogical seminary, 16:104–12 (1909).

In 1901 the Department of education of Japan measured the heights and weights for 869,014 children and Dr. Misawa reports the results of this study in the above article.

Miwa, Norhiva. A study upon weight from 3 to 80 years of age. Tokio I—Gauk—Zwai—Zatumshi (1893) v. 7. no. 9.

These measurements begin in the kindergarten and extend through the schools and to adults from other sources. A study of the effect of the weights in different classes of society is included, together with the problem of maturity.

Moon, S. B. The growth of boys. *In* American association for the advancement of physical education, 1896. p. 19–23.

A brief article giving the measurements in a percentile table for 150 boys who are measured annually from 11 to 15 years of age.

——— Measurements of the boys of the McDonogh school for 1881–91. McDonogh school, Md., 1892. 46 p.

——— The question of growth at puberty. American physical education review, 4:294–98 (1899).

Data are given with a view of testing Bowditch's law specifically in regard to retardation before pubescent acceleration. The law is not satisfactorily confirmed. It is concluded that "pubertal attainment has but little, if any, effect upon the rate of growth, at least in many cases."

Morey-Errant, D. Unity of the periods of growth in a man. *In* Illinois society for child study. Transactions, 1898. v. 4. p. 84–91.

A general discussion bearing primarily on puberty.

Morse, W. H. The baby's growth. Virginia medical monthly, 13:392–95 (1886–87).

A brief study of the weight of infancy, showing the comparative stages of physical development.

Muller, G. Alphonse Bertillon's method for the identification of criminals. Anthropometric identifications. Instructions for taking measurements and descriptions. Joliet, Ill., 1887. v. 8. p. 84.

A ractical guide for criminologists.

Nagorsky, ——. The influence of schools on the physical development of children. St. Petersburg, 1881.

Russian, cited by Sack. Not accessible to the writer.

Oppenheim, N. Development of the child. New York, Macmillan co., 1898. p. 1–92.

A good general treatment of growth, without statistics or original measurements.

Pagliani, L. Sopra alcuni fattori dello sviluppo umano-richerche anthropometriche. *In* Atti dell r. Accad. di scienze di Torino, 1875–76. v. 11. p. 694–760.

Also in Arch. di anthrop. ed etnol. italiana, 6:129–83 (1876).

These children were examined and measured in Turin and the accompanying tables give the effect of growth under favored and under less favored conditions, together with the effect of exercise on the development of the lung capacity of boys.

——— Lo sviluppo umano per età, sesso, condizione sociale ed etnica studiato nel peso, statura, circonferenza toracica, capacita vitale e forza muscolare. Giornale della Società italiana d'igiene, Milano, 1: no. 4, 357–76; no. 5, 453; no. 6, 589–608 (1879).

Paillot de Montabert, M. P. Traité complet de la peinture. Paris, J. F. Delion, 1828–29. 662 p.

Pearson, K. Growth of St. Louis children. Nature, 51:145–46 (1894).

In this investigation Dr. Pearson summarizes Galton's percentile methods and says that it is now acting as a distinct hindrance to statistical theory in an unexpected way, since it does not require the investigator to publish his raw material. A criticism is given of Dr. Porter's work on this basis, since the material is only given in the form of percentiles or in diagrams of the "Orgive" curve corresponding to the integral of the frequency curve.

Peckham, C. W. The growth of children. *In* Wisconsin. Board of health. Report, 1881. v. 6. p. 28–73.

About 10,000 children in the various schools of Milwaukee were measured and examined in 1881, ranging in age from 4 to 18 years. Eleven plates and 13 tables giving the rates of growth by nationality are included.

——— Various observations on growth. *In* Wisconsin. Board of health. Report, 1882. v. 7. p. 185–88.

This investigation showed there were certain important differences in the rates of growth of Boston children and Milwaukee children.

Porter, W. T. Anthropometrical measurements in schools. Educational review, 11:126–33 (1896).

A practical discussion of the study of physical growth from the educational standpoint.

——— The growth of St. Louis children. *In* American statistical association. (Quarterly publications), 1894. v. 4. n. s., p. 28–34.

Also in Academy of science of St. Louis, 1894. v. 6. p. 263–380.

This is one of the most significant investigations so far made, including measurements in height, weight, and span of arms, strength, girth, measurements of face and head, based on 34,354 children. A careful discussion of statistical measurements is included. There are 51 tables given in percentile grades and 46 plates. A bibliography is appended.

——— On the application to individual school children of the mean values derived from anthropological measurements by the generalizing method. *In* American statistical association. Boston, 1892–3. v. 3. n. s., p. 576–87.

A discussion of the significance of deviations above or below normal height and the requirements of a proposed system of physical measurements.

——— The physical basis of precocity and dullness. *In* Academy of science of St. Louis. Transactions, 1893. v. 6. p. 161–81.

In this investigation, which is based on the previous one, Dr. Porter gives 15 tables and 2 charts, tracing the development by age of dull, mediocre and precocious boys and girls and maintains that "Precocious children are heavier and dull children are lighter than mean children of the same age."

——— The relation between the growth of children and their deviation from the physical type of their sex and age. *In* Academy of science of St. Louis. Transactions, 1893. v. 6. p. 263–80.

In this investigation Dr. Porter compares the growth of the school children in the Freiburg with those in St. Louis and concludes: "The psychological difference between the individual children in an anthropometric series and the physical type of the series is directly related to the quickness of growth."

——— Remarks on the use of anthropometrical instruments in schools. *In* American association for the advancement of physical education, 1896. p. 158–64.

In this article Dr. Porter bases his discussion on the fact that "the average or other central value of the group of properly related measurements gives an idea of the character of the group." Emphasis is laid on types, and we are told that percentile grades can not be used as yet for prediction of future size.

It is recommended that the annual record of the height and weight of every pupil be kept, and that all pupils, whose height and weight ratio is above the 75 or below the 25 percentile grade of their age, be placed under special supervision in order that they may not be overtaxed by the work required of normal pupils.

——— Untersuchungen der schulkinder in bezug auf die physischen grundlagen ihrer geistigen entwicklung. Verhandlungen der Berliner anthropologischen gesellschaft (1893). p. 337–54.

A translation of the former article.

Quetelet, M. A. De la statistique considérée sous le rapport du physique, du moral et de l'intelligence de l'homme. *In* Commission centrale de statistique. Bulletin. Bruxelles, 1860. v. 8. p. 433–67.

An anthropological discussion dealing principally with marriage and only indirectly bearing on physical growth.

Quetelet, M. A. Des proportions aux corps humain. Académie royale des sciences, des lettres, et des beaux-arts de Belgique. Bulletin. Bruxelles, 1848. v. 15. p. 16–27.

A discussion of the Egyptians, Romans, and Indians.

——— Recherches sur le poids de l'homme aux différents ages. *In* Académie royale des sciences, des lettres et des beaux-arts de Belgique. Bulletin. Bruxelles, 1832–34. v. 1. p. 20–24.

——— Sur l'homme et le dévelopment de ses facultés, ou essai de physique sociale. Paris, Bachelier, 1836.

Pioneer work in the field of anthropometry, which studies records from the standpoint of an artist as well as of a scientist.

——— Sur les Indiens Ojib-be-was et les proportions de leur corps. Académie royale des sciences, des lettres, et des beaux-arts de Belgique. Bulletin. Bruxelles, 1846. v. 13. p. 70–76.

A brief scientific study of three Indians.

——— Sur les proportions de la race noire. *In* Inter. cong. f. sch. hyg., 1854. v. 21. p. 96.

——— Sur les proportions de hommes, qui se font remarquer par un excès ou un défaut de taille. *In* Académie royale des sciences, des lettres, et des beaux-arts de Belgique. Bulletin. Bruxelles, 1847. v. 14. p. 138–42.

A short summary with references to Ojib-be-was Indians.

Quirsfeld, E. Untersuchungsergebnisse physischer und geistiger entwicklung bei 1014 kindern vom 1. bis. 8. schuljahre. Prager med. wochnschr., 32:653–56 (1907).

Translation in International congress on school hygiene. 2d. London, 1907. Proceedings. p. 214–16.
A study of the physical and mental development in early childhood.

——— Vorträge: Zur physischen und geistlichen entwicklung des kindes während der ersten schuljahre. *In* Inter. cong. f. sch. hyg., 1904. v. 3. p. 128–34.

A careful study of physical conditions of children during the first years of school, followed by a discussion by F. A. Schmidt, E. Bayr, and Frau Dr. Krukenberg.

Ranke, O. Beiträge zur frage des kindlichen wachstums. Archiv. für anthrop., 3:161–80 (1905).

See also Der Mensch, 2:156–57.
A very careful study of about 2,500 children, with many measurements and tables.

——— Der Mensch. Leipzig, Verl. d. bibl. Instit, 1894–1900. 2v.

Chapters 2 and 3 of vol. 2 contain excellent material on growth and many tables from Europe and America. An excellent treatise.

Reuter, F. Beiträge zur anthropologie Hinterpommerns. Kindermessungen. Archiv. für anthrop., 28:288–388 (1903).

A careful experimental study based on 373 children, with many measurements, graphs, and indices.

Richards, A., *and* Little, B. B. A proposed standard chart to show the proportions of American females. *In* American association for the advancement of physical education, 1896. p. 30–34.

A detailed chart is given showing relative measurements.

Rietz, E. Das wachstum der Berliner schulkinder während der schuljahre. Archiv. für anthrop., 1:30–42 (1903). neue folge.

This investigation is based on a study of 5,134 Berlin boys and girls between the ages of 6 and 19, and includes the comparison between children from different types of schools. Twelve tables are included and one chart, with corresponding curves for the gymnasien and höhere schulen and the gemeindeschulen. A comparison is also made between the children of the better classes and the poorer classes at Hamburg, Berlin, Halle, Gohlis, Saalfield, Stockholm, Denmark, England, Boston, Turin, Warsaw, and Freiberg as outlined by Burke, but less complete, the numbers of individuals not being included.

——— Körperentwicklung und geistige begabung. Zeitschrift für schulgesundheitspflege, 19:65–98 (1906).

Roberts, C. Manual of anthropometry. London, L. Churchill, 1878. 118 p.

This is an important manual containing much anthropometric material and an extensive bibliography. The height, weight, and annual increments of 7,709 boys and men of favored class between 10 and 30 are included. There are also many other tables, one including height, weight, and chest girth of newborn infants; another of the average height, weight, and chest girth of the artisan class between the ages of 4 and 50. A careful comparison is made with Dr. Bowditch's work in Boston.

Roberts, C. Memorandum on the medical inspection and physical education in secondary schools. *In* Royal commission on secondary schools of England. Report. v. 5. p. 352–74.

This report deals primarily with the relation of weight and height to hygienic conditions, and the death rate at various ages.

——— The physical requirements of factory children. *In* Journal of the statistical society. London, 1876. v. 39. p. 681–733.

An excellent study including height, weight, and chest girths. Comparisons are made with Quetelet's data.

Rubner, ——— Das wachstumproblem und die lebensdauer des menschen und einiger säugethiere vom energischen standpunkte betrachtet. Berlin, 1908. 16 p.

Ruschenberger, W. S. W. Contributions to the statistics of human growth. American journal of medical science, Phila., n. s. 54:67–70 (1867).

Russow, A. Vergleichende beobachtungen über den einfluss der ernährung mit der brust und der künstichen ernährung auf das gewicht und den wuchs (länge) der kinder. Jahrb. für kinderheilkunde, Leipzig, 16:86–132 (1880–81).

Sack, N. Brustdurchmesser und das körpergewicht der knaben in den höheren schulen Moskau's. Aus dem Russischen übersetzt von Prof. Dr. Erismann (1892).

——— Über die körperliche entwicklung der knaben in den mittelschulen Moskau's. Zsch. für schulgesundheitspflege, 6:649–63 (1893).

A very important study containing many references to the work of others, a bibliography, and comparative tables.

Sargent, D. A. The physical proportions of the typical man. Scribner's magazine, 2:3–17 (1887).

A semipopular article giving methods of measuring and testing in the physical education of men, with three charts which show at a glance the relation of size, strength, symmetry, and development. These charts have had great influence in laboratories for physical measurements.

——— The physique of scholars, athletes, and the average student. Popular science monthly, 73:248–56 (1908).

A study of 15 groups of men from 18 to 26 years of age, all excepting one group being Harvard students—football players, crew men, strong men, scholarship men, etc. A table of the average height, weight, and strength of each group is given, the tallest and heaviest being university crew and football men, the shortest, and lightest being "stipend scholarship" men.

——— Report on the anthropometric measurements. A schedule of measurements with directions for making them. *In* American association for the advancement of physical education, 1886. v. 2. p. 6–15.

A significant guide for the making and recording of measurements.

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